THE

LARYNGOSCOPE.

Vol. XIII. ST. LOUIS, MO., SEPTEMBER, 1903. No. 9.

ORIGINAL COMMUNICATIONS.

(Original communications are received with the understanding that they are contributed exclusively to The Laryngoscope.)

SOME CRITICAL AND DESULTORY REMARKS ON RECENT LARYNGOLOGICAL AND RHINOLOGICAL LITERATURE.

BY JONATHAN WRIGHT, M.D., NEW YORK CITY.

(Fifteenth Paper—Second Series.)

It is impossible to ignore the fact that malignant disease is on the increase and there is every evidence to warrant the conclusion that this is not only an apparent increase, but a real one, *i. e.*, it is not alone dependent upon the increase of the average of longevity so that years of increased predisposition to cancer are now included in the average span of life. Individual experiences and impressions are only moderately less reliable than statistics, and I think these, too, testify to the results of statistical investigation which shows the increase of malignant disease. So far as I have seen there is not sufficient indication in the statistics to allow us to form any idea as to the relative increase of the different forms of cancer or of the relative incidence of cancer in the different regions of the body. So far as my own personal experience is concerned I have received the impression that all forms of sarcoma excepting the small round-celled and all forms of carcinoma, especially the glandular type, have been met with more frequently in the nose and throat during the last five years than formerly.

In Cordes' (*Berl. Klin. Woch.* No. 8, 1903) report of a case of adeno-carcinoma of the nose, I am surprised to find that in what he seems to think is an exhaustive search of the literature he has found a record of only seven cases besides his own. On referring to the

index of my pathological specimens of the nose and throat, I find that I have examined microscopically that many myself, from the nose. Some of those have been reported by others. It might be instructive if extensive observations were made on these points, viz.: the relative increase of the different forms of cancer, and the relative increase in the different regions. As to the forms of cancer, such an investigation would necessarily be attended by many difficulties, since records both hospital and private are very defective and very misleading as to histological forms. More valuable information could probably be obtained from laboratory records and it would be well worth the trouble to compare those of the last five years with those of a similar preceding period. There is another point upon which new light is needed. The textbooks of pathology in a general way supply the information, but from recent experiences it would be of much value to have more authentic and definite information as to the relative malignancy of the different forms of cancer.

But as yet these promising fields await cultivation and recent laryngological literature for the most part deals only with the time-worn and well-exploited themes of malignant disease.

Of these there are none more important than the question of diagnosis in incipient cases. In spite of the confidence expressed by Dr. John N. McKenzie, I think the majority of observers of long experience will admit they frequently encounter cases, which in the early stages present every appearance of a benign growth, and which ultimately exhibit a disastrous malignancy. Now it is precisely this stage of doubtful differential diagnosis wherein lies the hope of a successful issue to a radical operation. Given an elderly man who presents for the first time a laryngeal neoplasm, I care not how benign may be the appearance or how confident the diagnostician may be as to the benign character of its structure from a laryngoscopic examination that man's physician takes upon his shoulders a fearful responsibility, who waits for the development of evidences of malignancy before he proceeds to extirpate the growth and examine it microscopically. I believe he has only one justification; he may not believe in radical operative procedures in malignant laryngeal disease at all.

The plea of danger of starting up an increased malignancy I do not believe is well taken. Extirpation may unmask a pre-existing malignancy, but I consider it extremely doubtful if it hastens the end or jeopardizes in any way the patient's chances. The jeopardy of the patient's chances by this, I can not for a moment compare to that which may ensue by a delay of a few weeks or a few months

until the deep infiltration immobilizes the cord or a beginning ulceration indicates the breaking down of the vicious epithelium, or a cervical gland swells, indicating at least a profound, deep-seated inflammation within the larynx, or still worse, a beginning metastasis. When a skilled diagnostician says on inspection that a growth is benign, it usually is so; but, as I said above, not always. If benign, no harm will come from placing a piece of it under the microscope. The idea of converting a benign into a malign growth by intra-operative procedure is moonshine. If malignancy exists and the microscope can show it, the patient is given a chance to choose the course to be taken at a period when there is a hope which may be much less, a month hence.

I am much readier to admit a doubt as to the justification for a radical operation at all than I am as to the soundness of the view just expressed. I have elsewhere left no doubt as to my disinclination to set up the microscope as the court of last resort, but next to the laryngoscope the microscope is our most valuable diagnostic instrument in laryngeal cancer, and where we know the laryngoscope frequently fails, it is in the highest degree censurable, to neglect any aid the microscope can give us.

An opportunity for some further remarks on the incipiency of laryngeal cancer is furnished by the paper of Von Hinsberg (*Archiv. fur Laryngol.* B-d XIII—hft 3). He reports the case of a man 75 years old in whom a pedunculated laryngeal tumor, having existed six months and having been then extirpated, recurred in a few months. Repeated removals were as often followed by recurrences which finally resulted in the typical clinical manifestations of laryngeal cancer. At this point the man disappeared from view, two years having elapsed since he was first seen. No more typical picture, of course, of laryngeal cancer could be given than in the story the author tells, though it would be unfair for the critic to pretend to attach the same value to his own inferences as the actual observer has a right to expect for his opinion. He insists as the result of a microscopical examination of all the pieces removed, that he had clear evidence of the first tumor being of a benign nature. He very conscientiously gives a detailed description of the structure of the primary growth, which, however, does not carry entire conviction of its being benign to my mind. This doubt would perhaps not give rise to remark, were it not for the reproductions of drawings made of the microscopical appearances of the recurrences. From these it seems to me extremely improbable that the primary growth itself was free from suspicion of malignancy on microscopical examination.

The picture of the first recurrence if it does not present convincing proof of malignancy, certainly furnishes good cause for the probable assumption of it. I regard it as of very little consequence that the apparently detached islands of epithelium could be traced back in serial sections to a connection with the surface epithelium. Entirely too much stress has been laid on this point in histological diagnosis. It is true it is quite difficult to describe by words on paper the appearances which induce the experienced microscopist to make the tentative diagnosis of malignancy when there are no detached islands, but simply peninsulæ of epithelium in the sections. But it is none the less true that there is something in the filmy appearance of vagrant epithelial digitations and scallops, even when joined to the surface epithelium, which renders the experienced observer scarcely less confident of a lurking malignancy, despite the absence of epithelial whorls and hyaline nests and detached islands of epithelium. These latter are very ominous, it is true, and yet I have seen them more than once, but once very conclusively in a case of exaggerated leukoplakia, where the subsequent history entirely confirmed my negation of malignancy. The sharply defined line between stroma and epithelium when everywhere present rarely goes with malignancy whatever the gyrations of the epithelial hyperplasia, but on the other hand its absence has little significance, as in various excessive hyperplasias of the epithelium the cells drip off irregularly into the lymph spaces without appearing to multiply, or showing only a feeble tendency to do so. In other words there is an histological sense as well as a clinical sense which defies definition and is no less valuable. In the report of Hinsberg's case the author is at pains to disclaim his belief that it was an instance of the metamorphosis of a benign into a malign growth, but he exhibits a much more dangerous heresy in his intimation that the intra-laryngeal procedures for its removal induced the appearance of a malignant growth.

One may remark in passing that this seems a pretty fine spun shade of difference. Usually in instances of such reports in laryngological literature we have a subjective clinical record of the first appearance of the patient who presents every aspect of a benign growth, and the skepticism aroused by the report of the transformation phenomenon is due to the absence of a proper histological examination of the first tumor. Here, however, though the author fails to picture the appearances as he did in some of the recurrences, he gives a description of the histological appearances which may indeed, I admit, apply to a benign growth, but it may also, and of this I think there are indications in his description, apply to a malign

growth. As for the picture of the recurrences, they show evidences enough of malignancy, though he believed the first recurrence was also benign. For the sake of bringing out a point which deserves it, let us admit that the primary growth was a simple benign pedunculated polyp. The author admits this growth did not turn into a malign one. Naturally it couldn't. It was removed. He claims that as the result of the irritation of the endo-largyngeal operation for that purpose, evidences of malignant infiltration of the larynx appeared in the neighborhood of the base of the original growth. It is true that the author rather falters in his heresy and is somewhat equivocal in his statements of belief, but at least he advances an hypothesis which I supposed the statistics of Semon had demolished fifteen years ago. Let these be studied for the answer to this idea; they are comprehensive enough; and let us see if there is not another possible explanation of the phenomenon. Around tubercular and syphillitic lesions of the larynx and elsewhere, especially around ulcers, there is frequently, as is well known, the development of vegetations and epithelial proliferations, both on the surface and beneath it. Œdematous polypi are only less rarely seen under the same circumstances. These growths we recognize as the product of the irritation of the deeper-seated specific lesion. An histological examination of them when superficially removed by forceps, very frequently fails to reveal any specific histological structure, and but for other manifestations they would be regarded as benign growths. The same may occasionally be noted on the surface of the mucosa around an old cancerous ulcer. I know no reason why this should not occasionally occur, and I believe it often does occur as the result of a subepithelial disturbance of nutrition brought about by malignant proliferation of epithelium into the stroma. I can not help drawing the inference that this is in reality the explanation of many cases of supposed transformation of benign into malignant structure.

As a matter of fact, until the histologist has inspected every vestige of aberrant epithelium around the growth, he is in no position to assert the absence of malignancy. Now it is unfortunately the case that the histologist, when such apparently benign growths of the larynx are submitted to him, almost never has the chance properly to examine the base from which the growth sprang. The endolaryngeal forceps does not remove that. All he can do is to assert that no evidence of malignancy is present in the tissue removed. He may venture also to assert the probability that from the appearance of the parts submitted to him the base from which it sprang is also devoid of malignancy.

When, as the result of a wide excision of the breast, the histologist makes his sections through the sound as well as the diseased tissue and is able to say that he sees only benign proliferation, that is quite a different matter.

The fact that this growth of V. Hinsberg's was at first pedunculated is of considerable value in the differential diagnosis, but it is not conclusive of benignancy and with the remarks I have made above, is easily susceptible of explanation. I have dwelt at some length on the report of this case because I believe it important in view of the author's statement of belief that his intra-laryngeal operations had something to do with causing the incidence of cancer. This was what stimulated Semon to the collection of statistics, which laid a laryngological spectre. If this ghoul is again to haunt our consciences we might as well lock up our laryngeal instruments.

No one at present, so far as I am aware, questions the *possibility* of a benign growth assuming a malignant character. There is nothing in any theory against, but much in nearly all theories of pathogenesis in favor of it, but when we come down to the actual occurrence, the phenomenon has not been observed, or if actually observed, the reports of it have never been satisfactorily free from reasonable criticism. To this there is possibly an exception in the case of a gastric ulcer of the stomach finally becoming a malignant adenoma. I am disposed to think that a benign adenoma of the nose may finally become malignant, but I am in possession of no positive proof of its occurrence, though I have followed at least one case microscopically for twelve years. (*N. Y. Medical Journal,* Nov. 13, 1897.) Dr. Hinkel, in whose service it occurred, informs me in a recent letter that the adenomatous condition of the mucosa has finally ceased to recur after a thorough eradication.

While there is perhaps room for considerable difference of opinion as to the character of the case in the German "Archiv.," there is no histological excuse for the report of a so-called degeneration case in the Italian "Archivio. di Laryngologia" (Fasc. 2, 1903). Tanturri relates the history of a case as an instance of the malignant degeneration of an œdematous nasal polyp. Now usually, as I have remarked, it is the first part of the history of such a case which is open to criticism, owing to the absence of the proper examination of the primary growth, but here the patient recovered as usual after the removal of polypi, and the author congratulates himself on having saved him from the horrors of nasal cancer by an operation in time. Of course the ideal time to operate on a patient is before he has cancer, but it has the disadvantage of always giving rise to some doubt

as to whether he would ever have had it. From the description and illustrations in Tanturri's case, it is at once evident to the experienced observer that the author has mistaken the proliferation and metaplasia of the surface epithelium which one often sees in œdematous nasal polypi for a beginning malignant transformation. Disregarding for a moment the difference in the interpretation of histological appearances between the author and the critic, a more conclusive refutation of the case as an instance of transformation may be found in the character of the morbid tissue. If this growth was becoming malignant, evidently it was becoming a squamous-celled epithelioma. While a doubtful case of columnar-celled epithelioma of the nasal chambers has once come under my observation, I have never seen the squamous-celled variety. It is practically always an adeno-carcinoma. I think the assertion can safely be made that a squamous-celled epithelioma originating in the nasal chambers (not the annexa) is of the very greatest rarity. In making histological examinations of intra-nasal growths, sight should never be lost of the fact that these neoplasms in the nose, when excessive in size, grow under bony pressure at their surface as well as beneath. This in many cases modifies their internal structure. I have several times seen such modifications lead to the erroneous histological diagnosis, both of carcinoma and sarcoma. This is especially true of the accessory sinuses, but it is only less so of the nasal chambers themselves. Another source of error, though less often misleading (and I believe Tanturri's case is one of these) is the proliferation and metaplasia of the surface epithelium, due to the attrition of the polypi, hanging in the respiratory air current, against the bony intra-nasal walls. No doubt the ichorous secretions of the accessory sinuses, often purulent in these cases, is frequently an important factor in this change. At any rate the meta- and hyperplasia is not infrequent, and is by no means the beginning of a squamous-celled epithelioma.

After what I have said a criticism of Fraenkel's excellent paper (*Archiv fur Laryngol.* Bd. 13, hft. I.) would perhaps be a repetition, but it is well at least to refer to it here.

In an interesting disquisition on the relationship between Carcinoma and Pachydermia Laryngis, he reiterates his assertion as to the great diagnostic value of the proliferation of atypical epithelium. Kuttner had many years ago pointed out the fallacy of this assertion and Fraenkel has so far modified his original position as to declare that atypical proliferation in other than malignant growths of the larynx is very uncommon. By atypical proliferation I presume he means that in which the cells depart markedly from the normal

and their form of growth markedly from the symmetrical hyperplasia of the epithelium. While, as I have urged above, the exaggeration of these characteristics makes one suspect a malignant process, I have seen them marked in too many cases of chronic inflammation of various origins, tuberculosis, syphilis, simple diffuse pachydermia, vocal nodules, etc., to place an absolute reliance on the phenomenon in making a differential diagnosis. Any proliferative process, malignant or otherwise, if it has gone far enough and is old enough, may show this. So far as a positive diagnosis is concerned we must look for isolated epithelial nests in process of proliferation, or epithelial perls. The clinical history and the unsymmetrical karyokinesis of the cells are adjuvants, which must be appealed to in every case of doubtful origin. As to unequal karyokinesis, a certain amount of this is sometimes present in other hyperplasias of the epithelium than malignant, and when it is very marked other malignant characteristics are usually so far advanced as to leave little doubt of the diagnosis. The same may be said of the so-called Plimmers bodies.

When the clinical history supports the idea of malignancy as in V. Hinsberg's case, much greater significance is to be attached to these phenomena. In arriving at a diagnosis in doubtful cases the clinical history and the laryngoscopic appearances can not be separated from the minute anatomy of the growth. Either may be insufficient for a diagnosis, but the three combined may render the diagnosis little less than certain.

In the beautiful plates which accompany Fraenkel's article, made as they are from selected sections of the growth removed in its entirety, it is comparatively easy to arrive at a tolerably accurate opinion as to the kind of epithelial proliferation with which one had to deal. Entirely different is the problem which is usually presented to the microscopist for a differential diagnosis. A small shred of tissue removed by laryngeal forceps contains a lot of epithelial cells usually buried or surrounded by granulation tissue and often mashed into fantastic shapes by the action of the forceps themselves. If the operator is accustomed to accept the announcement of disordered proliferation of the epithelium as sufficient evidence of malignancy, one can readily understand the brilliant results attained by endolaryngeal operation for incipient cancer.

Fraenkel, however, advances evidence that even the presence of perls in the epithelial hyperplasia is not diagnostic of cancer with certainty. As to this I must bow to his superior experience. I know no reason why they should not occur in other epithelial tissue, and I

have seen something very like them in the diseased tonsillar epithelium, but as a matter of fact it has been my experience that when these are present the diagnosis is all but assured. Nevertheless I am quite ready to join in his declaration that as to any single characteristic there is nothing of such pathognomonic significance that on beholding it we are warranted in saying "this is cancer."

Very little has been published in the last year or two which materially advances our knowledge of the technique of operation for laryngeal cancer, either as to endo-laryngeal or extra-laryngeal methods. Killian (*Archiv. fur Laryng.* Bd. XII, hft. 3.) reports a case of a tracheal tumor, which he calls sarcoma, cured by direct or Kirstein tracheoscopic manipulations. It is singular that sarcoma is relatively so much more common below the larynx than in it. Carcinoma is by far the most frequent of the forms of supra-glottic malignant growths. In some statistics I collected several years ago, tracheal cancer, while exceedingly rare, was made up of ten cases of primary carcinoma and seven of sarcoma, the latter growth, according to Killian, having now been reported thirteen times.* His own case was said to have been one of the large-celled variety. I desire to note here an incidental remark of Killian upon which too much stress can not be laid, as it enters into the consideration of the justification of operation in these cases. It bears upon the efficacy of incomplete eradication in certain cases of sarcoma. While the microscopical diagnosis seemed to be warranted, Killian judged his was one of those growths we not infrequently see in the upper air passages, which, while having apparently the structure usually denominated as sarcomatous, runs a benign post-operative course. The result proved the accuracy of the author's clinical sense and the growth did not recur after the necessarily uncertain extirpation by endotracheal procedure. We must keep such cases in view, and they are numerous, when we are called on to form an opinion of the efficacy of the various vaunted methods of cancer therapy. The toxins, ligation of nutrient vessels, radio-therapy, all find their triumphs in the sarcomata, and their optimistic advocates reserve judgment as to the cure of carcinoma. Such judgments are usually never subsequently given to the public, who are, however, privileged to draw their own conclusions.

Apropos of this instance of successful intratracheal operation by means of the Kirstein method it may be well to draw attention to the remarkable results claimed for this species of legerdemain in the

* On referring to Moritz Schmidt's work, *Die Krankheiten der oberen Luftwege*, I find he says he has observed 75 cases of laryngeal carcinoma, and only 8 of sarcoma.

way of the removal of foreign bodies. The method may possibly again, as with Killian, find its use in the extirpation of even a subglottic malignant growth, and hence its consideration is not out of place in a study of the literature of laryngeal cancer. Dr. O. Wild (*Archiv. fur. Laryng.* Bd. 12, hft. 2.) reports from Killian's clinic two cases of foreign bodies in the bronchi successfully removed by the aid of bronchoscopy through the mouth. One of the cases, certainly a most remarkable instance, was a child of six years, and the manœuver was carried out under chloroform narcosis. It is hardly worth while to give a summary of these cases here. Suffice it to say that the successful performance of such a difficult feat seems to the inexperienced laryngologist little short of the miraculous. The illumination of the bronchi from the mouth sufficiently to detect a foreign body (*a bean*) in one of them, in an anæsthetised child of six would seem of itself remarkable enough, but to insert, down the narrow, slimy tube, a pair of forceps and grasp under the control of vision a body partially enclosed by a ring of swollen mucosa above it almost surpasses belief. Nevertheless we must accept this as occasionally a feasible procedure, it having been demonstrated as such by Killian, Schroetter and others. Certainly this is a triumph of skill in modern laryngology of which the operators may well be proud. But such things, while exciting our wonder and admiration, are very apt to prove of little practical value. The necessary instruments are of complicated and expensive construction. The cases in which they can be used are of very great rarity. The instruments rust in the operator's case, the operator's hands have become unskilled and his interest has waned. Finally, the case presents itself and immediate intervention is necessary. There is no time to tinker a capricious electric lamp and a rusty tube, nor even to send the patient to Vienna. The surgeon's knife is ever ready and a low tracheotomy for the insertion of the forceps will continue to be the procedure resorted to in such cases.

Of more practical value is the paper of Moure (*Rev. Hebd. de Laryng. Etc.,* No. 6, 1902). He returns to the subject of the suture of the air passages immediately after operation, dispensing with a tracheotomy tube altogether. He relates a number of cases in which the larynx or trachea was closed at once after the removal of foreign bodies, or in which the tracheotomy tube was not used. The results in these cases were excellent. It is singular that this has not been the routine practice. As for the immediate suture of the airway after removal of an intra-laryngeal growth, this procedure may bear more mature consideration, but with an operator immediately at hand

in case of emergency, it also would seem a very plausible practice. The laceration or cauterization of intralaryngeal tissue is pretty sure to be followed by extensive inflammatory reaction accompanied by more or less narrowing of the air way. Moure speaks not only of this, but of a temporary immobility of the vocal cords in the median line, and yet where this occurred the patient did not suffer from dangerous dyspnœa. While local sepsis occasionally occurred, the dangers of pulmonary complications were much lessened. Emphysema of the subcutaneous tissue of the neck was present in one or two of the cases, but it lead to no serious results. One can not help believing that dispensing with the post-operative tracheotomy tube is a distinct gain in the technique of the surgical operations on the air tube by an external incision, but, of course, and perhaps after all, this is the most important point to remember, no hard and fast rule can be laid down applicable to all cases. When the plan is followed, after the extirpation of growths especially, it is scarcely necessary to say that the greatest precautions must be taken for obtaining immediate relief should sudden œdema bring on the crisis demanding it. A stitch or two only may be taken at the upper and lower angles of the skin incision or a deeper suture may be passed through the subcutaneous tissue and the cartilage, care being taken that, at the central point, the tissues only lie in apposition so that air issuing from the larynx or trachea may not cause embarrassing emphysema. The performance of intubation, though not mentioned by Moure, might obviate the necessity of tearing open a half-healed incision to relieve the dyspnœa should it supervene.

RETROPHARYNGEAL ABSCESS: REPORT OF THREE CASES.*

BY L. C. CLINE, M. D., INDIANAPOLIS, IND.

The subject of retropharyngeal abscess is one of more than ordinary interest to the laryngologist, for the reason that it may be, and is, overlooked by the general practitioner, on account of the rarity of the disease and the lack of expertness in examining the throats of infants in early childhood.

The specialist is usually called in at a time when the case has become serious and something must be done, it being a disease of fatal tendency, manifesting a variety of clinical aspects; involving as it does the adeno-lymp structures of the oro- and the laryngo-pharynx. As these structures mature early in infancy and childhood, it is then when they are most likely to become infected and break down, forming an abscess. These abscesses occasionally occur in adults, and in advanced age; such cases are usually traceable to traumatism, leutic or tubercular causes.

The lateral pharyngeal spaces are the seat of several clusters of lymph nodes which are intimately connected with the surrounding lymph vessels that are in direct communication with the nose, soft palate and pharynx. From the fact that these abscesses in children are nearly always associated with or follow as a sequela of some of the nasal or facial inflammations we are justified in assuming that they are of bacterial origin.

Quoting from Shurley's recent book, "Koplik has isolated four distinct species of the streptococcus which he says are the micro-organisms present in the pus of these abscesses." The following cases have come under my observation during the last three years:

Case 1. On March 14, 1900, the writer was asked by Dr. F. A. Morrison to see in consultation the daughter of Mr. and Mrs. W. She was the only child, age five and one-half years. The doctor informed me that the case had just come into his hands and the child had been treated by a homœopathic physician who had, after becoming alarmed at the symptoms, abandoned the case to allow some other doctor to sign the death certificate. Examination revealed an extremely emaciated condition, temperature 101°, neck was very

* Read at the Eighth Annual Meeting of the Academy of Ophthalmology and Oto-Laryngology, Indianapolis, April 9-11, 1903.

much distended and swollen; greater on the left side. The child was cyanotic; would occasionally have attacks of dyspnœa and a peculiar croaking or barking cough; neck appeared stiff and head was inclined backward. The mother informed us that on three or four occasions during the child's illness she had suffered prolonged attacks of strangulation and coughing, at which times she would vomit large quantities of phlegm and purulent looking material, after which she had always appeared better for a few days.

Digital examination revealed a large swelling extending down into the laryngo-pharynx and up behind the palate pressing firm against the larynx and soft palate. Examination caused a fit of coughing and dyspnœa that was not encouraging. It was agreed that a free incision was in order, which I did by going well down and cutting up toward the median line; the head was lowered and a little counter pressure was made on the sides of the neck, which caused a large quantity of pus to escape. The child improved rapidly until the fourth day, when it began to get worse; on the fifth day Dr. Morrison was hastily summoned and found the child almost at the point of death from suffocation; not being able to obtain relief as before, he hastily did a tracheotomy and saved the child until further drainage could be effected.

After five days the tracheotomy tube was removed and the child made a slow but uneventful recovery. The parents of the child were in apparent good health with no luetic or tubercular history. The child had never had any severe illness further than slight attacks of tonsillitis and a mild case of what was supposed to be grippe just prior to the present illness.

Case 2. In March, 1902, I was called to our City Hospital to see a man, age 57 years. Found him sitting in a rocking-chair, head thrown well back; he had an annoying cough and dyspnœa that came on in paroxysms; had swallowed nothing but a little liquid food for several days. Neck was swollen and stiff; there were several large nodular swellings near the angle of the jaw and just above the clavicle; examination revealed a large swelling involving the entire posterior pharyngeal wall. The pressure against the larynx was causing great distress in breathing and a spasmodic cough.

There was no luetic history so far as obtained, but a decided tubercular tendency in the family record. A long and deep incision was made, cutting from below upward, following the median line. To my surprise there was but little discharge, the cut gaping wide open from which oozed some pus and broken-down connective tissue, a considerable amount of which was pressed out with the fingers. His

ability to breathe and swallow was much improved, but he gradually succumbed to the general infection, and suddenly died in the sitting posture two weeks later. The infection had doubtless found its way into the mediastinum. This case was evidently tubercular as revealed by the microscope and family history.

Case 3. On March 11, 1903, a boy two and one-half years old was brought to my office by its parents at the request of the family physicians, Dr. J. H. Justice of Greenfield, Ind., and Dr. F. A. Morrison of our city.

The child had never had any illness of consequence except a light case of measles at the age of six months. The present sickness began four weeks prior when the child was taken with what was supposed to be a cold or influenza from which it partially recovered, a croupy condition remaining, which was troublesome at night. During the last three days the parents noticed that there had developed paroxysms of a peculiar croaking cough and the neck appeared stiff and the head was inclined backward during the paroxysms. During the previous night it could not sleep except when it was held in a forward position.

Examination revealed a large swelling on the posterior wall of the pharynx, pushing the soft palate forward and pressing firm against the top of the larynx. Abscess was diagnosed at once; a free incision was made, beginning low down and to the left, cutting toward the median line. The head was immediately lowered and a large amount of pus and material simulating clabbered milk was pressed out with the finger. The child made a quick and uneventful recovery. The parents were both apparently vigorous and healthy.

Willoughby Building.

CASE OF MASTOID SUPPURATION ACCOMPANIED BY EPITHELIOMA.*

BY CARL E. MUNGER, M. D., WATERBURY, CONN.

Asst. Surgeon Manhattan Eye and Ear Hospital, New York.

Mrs. W., aged 38 years, complained in October, 1901, of pain in the head and left ear, which was followed in a few days by discharge from the left ear. Two months later facial paralysis ensued. She continued to have discharge and considerable pain, and came under my notice at The Waterbury Hospital, June 6, 1902, with the history of having had practically no medical or surgical attention during all this time. The condition was as follows: An opening in the mastoid region with exuberant granulations, also an opening in front of the tragus with exuberant granulations. There was complete facial paralysis of the left side. The patient was etherized and a great amount of necrosis was found. The whole posterior wall of the canal was necrosed and there was a most extensive necrosis of the mastoid process—demanding a very free operation, so much so that when apparently healthy bone was reached my finger placed in the mastoid wound easily passed to the glenoid fossa, and a probe would pass into the cranial cavity. The immediate effect of the operation was that the patient slept for nearly twenty-four hours on account of relief from pain, she herself saying that it was the first sleep that she had had for two months.

The wound started to heal kindly, but after two or three weeks the old spouting, granulating condition reappeared. I left at this time for my vacation and on my return I found the process extending, and an examination of tissues sent to Dr. Harmon Smith brought out this report:

"The specimens of tissue sent me by you were present in the bottle, both having quite similar gross appearances. Microscopic examination showed them both to have also the same microscopic structure; therefore, one description applies to them both.

"The greater bulk of the tissue is made up of tongues of rapidly proliferating epithelial cells, mostly of the squamous type—these epithelial growths have no regularity of arrangement, and the cells composing them show many irregular karyokinetic figures. The amount

* Read by title at the Ninth Annual Meeting of the American Laryngological, Rhinological and Otological Society, Lexington, Ky., April 30, 1903.

of connective tissue stroma in the sections is very small, and what is present is filled with an exudate of small round cells, blood extravasations and other evidences of an intense inflammatory process.

"Epithelial 'cell nests' are abundant, and many of the cells contain extraneous bodies, such as blood cells, broken-down nuclei and so on, which give rise to the so-called 'cancer protozoa' which are more than ordinarily numerous in this specimen.

"The specimen is an undoubted squamous celled epithelioma, of rather a low type of malignancy for this variety of cancer. Associated with the new growth is an intense inflammation which may be either secondary, independent or possibly primary.

"Although the growth is of a low type of malignancy for epithelioma and has probably been of somewhat slow development, it is certain to set up metastases if permitted to remain, and it will recur at its original site unless thoroughly removed."

The case from this time was progressive, and after a great deal of suffering and discomfort the patient died December 17, 1902.

These mastoid and auricular epitheliomas are evidently very rare, and, in fact, I have been unable to find a report of an exactly similar case.

The cases that I have seen reported are briefly as follows: Three cases reported by Leopold Treitel, Berlin Arch. of Otol., Vol. XXX, No. 3:

1. Man aged 55 years, had had double otorrhœa from childhood. The tympanic cavity was filled with granulation tissue, which showed malignancy and there was a paralysis of the facial and deep recurrent laryngeal nerves of one side.

2. Female, 77 years. Otorrhœa for 17 years; diagnosis of malignancy made in 1891; died in 1898.

3. Female, 63 years. Profuse hemorrhage from one ear. The region in front of the tragus was thickened. There was facial paralysis and mastoid pain, which pain was not relieved by operation. Autopsy showed entire squamous bone and all of mastoid, except posterior, involved. Sigmoid sinus was empty and collapsed. The internal carotid was occluded by coagulum.

Pooley reports a case (N. Y. Medical Journal, 1902, July 26) in which there was a nodule on the auricle five years previously, then an ulceration—this was an epithelioma of the auricle and auditory canal. In Delstanche's case (Archiv. fur Ohrenheilkunde XV.) the growth proceeded from the inner surface of the right tragus and extended so far that the tympanic cavity and Eustachian tube, the posterior part of the frontal bone, the lining of the sphenoid bone and the posterior wall of the orbit, were exposed and destroyed. The symptoms were facial paralysis, amaurosis, loss of taste and smell and paralysis of right palatine muscles. Haskin reported at the last meeting of this society a "case of epithelioma of tympanic cavity and involving mastoid" occurring in a woman 42 years old, with a running ear of thirty years' standing, following scarlet fever.

Dench (Medical Record, Nov. 1, 1902) reports a case of malignant growth of the middle ear involving the cranial cavity. This occurred in a child eighteen months of age. The tumor was situated in the canal and was an "endothelial sarcoma occupying the region of the cortex lying over the antrum and tympanic bone, involving the cranial cavity and extending nearly to the apex of the petrous pyramid."

There was a case reported in a Russian journal, which I have not yet seen.

All of these cases differ very materially from the one which I am reporting, and which seemed worth reporting for the following reasons:

1. The case started as an ordinary acute otitis media—without any previous history of a running ear.

2. The complete facial paralysis.

3. There was no cancerous family history.

Waterbury, Conn.

THE IMPORT OF THE SALIVARY AND NASAL SECRETIONS IN HAY FEVER.*

BY D. BRADEN KYLE, M. D., PHILADELPHIA, PA.

It is a fact long well known that products of secretion and excretion, through chemic analysis, afford the observing clinician a fair idea of what process is going on within the body. That the information thus obtained may at times be very imperfect is not, I think, a fault of the method, but rather because of the state of incompleteness at which we have allowed our investigations to stop. Thus during the eight years since my attention was first called to the importance of salivary and nasal secretions in their relation to health and disease, I have devoted considerable time in studying the chemistry of these secretions. When we consider the limitations of our knowledge of normal saliva, and add to this the altered chemistry associated with pathologic changes, we find ourselves in a field of organic chemistry so extensive and so barren of definite data as to become almost appalling; and while many observations thus far have been based on theory, yet from an immense amount of laboratory work and associated clinical phenomena, sufficient deductions have been worked out to prove of definite knowledge, with consequent benefit to the patients in many cases.

There is no question that under certain conditions, for example, when the secretions are acid or alkaline, that the chemic process taking place within the various secretory glands must vary and the product of such variation in these unknown quantities must be somewhat the same as the variations we would obtain in dealing in the laboratory with known compounds. In other words, the body is largely a chemic laboratory, having on hand a certain amount of material and having added to it daily other ingredients through the respiratory and alimentary tracts. Now, any perverted condition from what is known as the normal chemistry may bring about a series of changes giving rise to chemic products which may be harmless or productive of disease processes. On no other basis can we explain the various diatheses, or the precipitation of certain materials

* Read before the American Laryngological, Rhinological and Otological Society, Lexington, Ky., May 1, 1903.

in the tissues of the body; for example, why uric acid should be formed and precipitated in so many and varied forms in certain individuals, while others under the same hygienic surroundings are absolutely free from such chemic compounds.

That cell nutrition depends upon the *chemistry* of its supply is illustrated in disease processes associated with any form of infection or rise of temperature. This opens up an enormous field for speculation and investigation. The amount of infection, the peculiar chemic change produced by temperature, the materials absorbed into the body from infective processes, or the auto-infection from the intestinal tract, would in each condition produce its own peculiar chemic compound and effect on the mucous membrane. Yet I believe a general basis or standard can be reached, at least sufficiently accurate from which to draw chemic and clinical deductions.

Michaels of Paris has done excellent work in studying the saliva from the standpoint of the dentist. (The literature on the subject is scant. I have been interested in this subject for several years and a part of my work is incorporated in a paper read in Boston at a meeting of the American Laryngological Association in 1902.) Before taking up the subject of *The Import of the Salivary and Nasal Secretions in Hay Fever* it is advisable to consider it from a general standpoint, and in so doing I take the liberty of quoting from my paper published in *American Medicine*, (Vol. IV., No. 2, July 12, 1902,) on *The Chemic Pathology of the Salivary and Pharyngeal Secretions (Sialo-Semeiology)*.

I reasoned the matter out as follows: It is a well known physiological and therapeutic fact that certain drugs have a selective action on certain tissues or organs of the body, *e. g.*, belladonna with its selective action on the pharyngeal surface; sodium phosphate with its selective action on the liver, etc. It is also a physiological fact that the normal chemistry of the body controls the normal secretions from the various secretory organs; that any perversion from the normal, necessarily alters the character and chemistry of the secretion, and that the products of such alteration, act as irritants to certain parts of the body; the difference between this and drugs administered is that one is manufactured within the body, while the other is introduced from without.

I was convinced that from the study of the saliva we could determine to a great extent any variation in the chemistry of the body, as these various secreting glands receive from the blood the supply from which they elaborate certain chemic compounds. If an analysis be made of the composition of such secretion it would give a good

index to the general condition of the individual, and while in many cases the deductions were based on or rather associated with clinical observation, I soon found them to be of immense value from a standpoint of diagnosis.

As the tissues and secretions depend upon the blood plasma, any dyscrasia would modify the chemic composition of the body and produce local or general manifestations. According to Ducloux, hypoacidity favors chemic changes in the tissues, oxidation processes are exaggerated, and there is an increase in the quantity of organic acids. By the ordinary litmus test, blood is normally alkaline, but, as Douin and Gautrelet have shown, if we study the distribution of the acids and bases of the blood plasma, we see that the reaction is really acid, and if waste products are not eliminated this acidity is increased. The secretions and excretions then become of an acid reaction.

The functions of saliva are physical and chemic. Its physical function is to moisten the food and thus facilitate tasting and deglutition, and also as an aid in articulation. Its chemic action depends upon its ferments, the most important being ptyalin, which converts starch into sugar. The proteolytic and lipolytic ferments are not important. It is possible that any other fermentation save the amylolytic is due to bacteria.

The administration of drugs for the relief of, for example, an infective process, probably effects such relief by changing the chemistry of the secretions and blood constituents, thereby producing a chemic compound which either prevents the formation of infectious material or alters the nidus of infection to such an extent that it is not suitable for the growth of bacteria.

The altered chemistry of the saliva presents many possibilities from an etiologic standpoint. It is quite possible that many forms of indigestion and diseases of the stomach and intestines may be brought about by the altered chemistry of the saliva. A great many morbid processes are traced to uric acid in some of its many forms, but I believe that many other substances equally important are deposited and eliminated, which substances act as irritants, causing mucous membrane lesions. This may also explain many of the so-called reflex neuroses, *e. g.*, hay fever.

The numerous theories as to the etiological factor in hay fever proves conclusively that as yet there has not been established a definite cause. It may be that different conditions act as etiological factors; in fact, it is my belief that not all cases which we call hay fever, or hyperesthetic rhinitis, are due to any one cause; or if to

any one factor, that factor is found in the altered chemistry of the secretions of the individual.

I am persuaded, after making a series of examinations of the saliva in certain individuals afflicted with hay fever and those not afflicted with the disease, that in many cases the local irritation in the nasal mucous membrane is brought about by some chemic change in the constituents of the secretion of the mucus-secreting glands. Sensitive areas within the nasal cavity or irregularities of formation of the cavities are factors in some cases; yet such areas or irregularities instead of being etiological factors, are merely more susceptible to the irritant from within.

It is a well known fact that in many cases of hay fever the irritation is not limited to the nasal mucous membrane; the conjunctival, buccal, pharyngeal and laryngeal, with even the mucous membrane of the stomach and bladder may be markedly irritated. This could scarcely be explained on the basis of a reflex neurosis. In such cases the mucous membrane suddenly becomes engorged, and is exceedingly sensitive, with profuse, watery, irritating discharge. This comes on suddenly, often without any apparent external irritant, and at times looks very much as though there was an effort on the part of the mucous membrane to rid the system of material which had just reached a certain point of accumulation. Or, as was alluded to in another connection, the human body is nothing more than a chemical laboratory performing its daily function and manufacturing and liberating certain normal chemic ingredients and constituents, and that under certain conditions the chemistry of these secretions is altered, and the manufactured product, instead of performing a physiologic function, serves as an etiologic factor in producing a pathologic process. This may be in the form of a secretion or in the form of an infiltration or deposit. We have such a condition exemplified in uric acid diathesis, but I believe in many cases in which we attribute the symptoms present to uric acid, that instead of uric acid we have some other organic compound formed, due to perverted chemistry, and which product is deposited on or within the tissue. I have been able to demonstrate this in a number of cases in diseases of the nose and throat.

I think there is quite a field for investigation in this line to determine if there is not in many cases manufactured within the system the irritating material which brings about the attack, and that it can best be determined by a study of the saliva.

The question may be asked: "Why does hay fever come on at certain times of the year?" That climatic and atmospheric condi-

tions produce changes in function and secretion, that certain diseases are prevalent at certain times of the year, and that under certain climatic and atmospheric changes, individuals are more susceptible to disease, has long been observed. This may be due to some condition of the individual which renders him susceptible to disease, owing to lowered cell-resistance and altered chemistry, since temperature and climatic changes do affect the chemistry of the secretions. As to the effect of pollen in certain cases, is it not possible that, owing to some peculiar constituent of the secretion of the mucous gland, there is deposited in or on the nasal mucous membrane certain materials which, when brought in contact with certain extraneous materials as pollen, through some chemic action, produces a material which brings about the irritation and causes an attack of what is known as hay fever; *or* that the extraneous material merely acts as a stimulant to the mucous glands, and causes a flow of mucous, which, owing to its altered chemistry, acts as an irritant. This is exemplified in the cases in which the ammonium salts bring on an attack identical with that produced by the rag-weed pollen. If the administration of the tincture of rag-weed produces immunization to hay fever, it must do it through the secretory function and the chemistry of the secretions would be such as to contain no materials which, when coming in contact with the pollen of the plant, would produce any irritating substance. I have seen cases illustrating this point. There is no question that the irritation is caused by some product of chemic action. The question involves organic chemistry, and any one familiar with the work recognizes the time and labor necessary to work out such chemic formulæ. However, I have done sufficient laboratory work in the past eight years to convince me that on this basis we can relieve many cases of hay fever. That the chemistry of the secretions has to do with the causal factor, I have illustrated in a number of cases by rapidly changing the reaction of the secretion either from acid to alkaline or from alkaline to acid, or rendering it neutral, and in many instances I have been able either partially or wholly to cure the attack.

I use the word "cure" in the same sense that one would say that he "cured" a "cold," yet would not mean by the expression that the person would never "catch cold" again. I think if we would give more attention to the secretions we would find less occasion to do certain surgical operations on the nose. I have known a teaspoonful of salt, swallowed at a dose, to result in almost immediate control of more than one attack of hay fever. This I consider to be an ex-

ample of what might be accomplished by changing the chemistry of the secretions.

Owing to the fact that the mucous membrane of the nasal and nasopharyngeal cavities is supported by bony structures, and that the blood supply comes largely through this bony structure, there is a greater tendency to congestion, deposit and infiltration in this locality, which may explain why so often the irritation is limited to the nasal coats.

It has been clinically observed that very few children suffer from hay fever. Is it because the sensitive areas within the nasal cavities are not fully developed, or is it because in children we have rapid elimination, open lymphatic system and rapid metabolic change, thereby enabling the system to get rid of irritating material and with less chemic change in the secretions? Another interesting clinical observation is that hay fever never manifests itself in an individual who is suffering from atrophic rhinitis, and in this condition the atrophic process not only involves the sensitive areas, but also the mucus-secreting glands.

Certain individuals will have at any time in the year an attack which is quite similar to hay fever. The individual may be sitting comfortably at home, subject to no draughts or exposure whatever, when he is suddenly seized with congestion of the nostril, followed rapidly by the thin watery discharge of a decidedly irritating nature, free lacrimation, with burning and itching in the nasal cavities, eyes and nasopharynx. Frequently associated with this is a slightly asthmatic tendency. It cannot be cold, it is something in the nasal secretion, and when the secretion comes to the surface and in contact with the air there is liberated some material (chemic) which acts as an irritant to the vaso-motor system (peripheral terminal nerve filaments), and causes sudden congestion. Such attacks are quite like inhaling ammonia fumes and in such cases there is present an excess of ammonium salts in the saliva. Owing to some chemic change in the secretions of the individual there is accumulated within the system, which in the point of accumulation reaches that period in which it overflows, and the secreting glands liberate on the surface this material, which when exposed to the air undergoes a chemic change. In many instances on examination of the saliva and nasal secretions there has been found an excess of the sulfocyanids and the ammonium salts. When this secretion is exposed to the air there is liberated free ammonia, which I believe to be in many cases the cause of the attack. The symptoms produced are identical with those of the inhalation of ammonia fumes.

In a healthy condition of the saliva the sulfocyanids and the ammonium salts are in about equal proportion; in hyperacid conditions the sulfocyanids are in greater proportion than the ammonium salts, and the secretion is less irritating. In the hypo-acid state the ammonium salts are in excess of the sulfocyanids and the secretion is decidedly irritating, and in many cases in which I have been able to examine the secretion of hay fever patients this hypo-acid condition has existed. This is not true in all cases, as I believe different irritants may be the cause in different individuals, and it is for the physician to study and determine the irritant present or produced by the chemic alteration of the secretion.

It is a clinical and chemic fact that where there is an excess of nitrogenous material the ammonium salts are always in excess.

Any altered condition of the excretory or secretory glands causing altered products can be demonstrated in the saliva, or in other words, altered chemistry of the secretion can be traced to faulty digestion, faulty elimination from the kidneys or liver, or intestinal tract, when there is thrown into the system materials which at once alter the chemistry of the saliva and as the saliva is taken back into the system we have produced certain reactions. This is unquestionably true as the salivary glands derive their constituents from the blood.

The sudden onset of hay fever, coming on as it does in certain individuals at a certain day and even hour of the day, is difficult to explain, except upon the clinical observation that season and climate affect the individual as well as his secretion; and since the majority of hay fever subjects are of the neurotic type, they are more subject to impressions. In such individuals it is also a well-known fact that any nerve strain or mental tension rapidly affect and alter their secretions.

While the investigations I have made are somewhat fragmentary and incomplete, yet I do believe that I am justified in the statement that physiologic chemistry of the salivary glands, in fact of the mucus-secreting glands of the upper respiratory tract, does and will play an important part in medicine from the standpoint of diagnosis and treatment. Since the nasal secretion and the saliva give practically the same results, the experiments were largely confined to the saliva.

1517 Walnut Street.

REPORT OF CASES OF PYOGENIC BRAIN DISEASES, ASSOCIATED WITH OR CAUSED BY ACUTE AND CHRONIC NASAL SUPPURATION.*

BY THOMAS HUBBARD, M.D., TOLEDO, O.

Case I. Ozæna with ulceration; mastoid osteo-sclerosis: fatal leptomeningitis; autopsy.

Male, aet. 21, had chronic suppuration of the left ear for ten years or more. For many years had been afflicted with chronic ozæna with ulceration—non-specific. General health impaired but there was no systemic disease determined. He developed meningitis of subacute type, the symptoms gradually becoming more pronounced over a period of several months, and finally culminating in a violent maniacal delirium with focal manifestations and death.

There had been no unusual ear symptoms prior to nor during this sickness, but it was observed by the family that he had been using instruments for dislodging nasal crusts and frequently caused bleeding thereby.

The examination of the cranial contents was made in the family vault, and it being extremely cold weather, it was hastily completed. The meninges were bathed in pus in median line from frontal to foramen magum. Plastic adhesions suggested a chronic meningitis. The temporal region was free from indications of infection from that source—nor were any of the venous sinuses involved. There was sclerosis of the mastoid with caseous debris in the remaining cells.

The accessory sinuses as far as examined, that is, the superior ethmoidal and sphenoidal, contained pus, but there was no fistula traced to the dural surface. Within the nares, extensive erosions of mucous membrane were found, and the upper part of the vomer was destroyed almost to the extent of producing a perforation. I came to the conclusion that the purulent leptomeningitis had been caused by infection from the nares.

EXHIBITION OF ERODED VOMER.

Case II. Ozæna; suppurative mastoiditis; cerebral abscess; death; autopsy.

Woman, æt. 25. The mother of three healthy children, the youngest being about five months old. The husband was a dissolute man and there is a possibility of syphilitic infection. She had had ozæna

*Read at the Ninth Annual Meeting of the American Laryngological, Rhinological and Otological Society, Lexington, Ky., May 1st, 1906.

for many years, and the whole nasal vault was dry and encrusted with fœtid scabs. Her attendant called attention to the fact that she habitually picked at her nose with hairpins or other instruments.

In December she developed otitis media purulenta, with involvement of the mastoid cells. What seemed a severe mastoiditis subsided under treatment by a colleague and in four days she left the hospital, without permission, to care for her infant. For nearly two months she had no special care, and I saw her for the first time February 12. She had walked nearly a mile, and said that she felt better for the exercise. At times she expressed herself fairly well, but was somewhat incoherent and dull. Her mind worked sluggishly, and her companion said that at home she would sit for hours not comprehending what was going on around her, even allowing her baby to fall from her lap to the floor. The chief complaint was of excruciating head pains referred to the occipital region. Earlier in her sickness frontal pains had predominated.

There was no mastoid swelling, but decided tenderness. The fundus of the canal showed a dried purulent scab over the upper part of the membrane, but no discharge of pus. I decided that there was indication for exploring the mastoid and searching for the probable source of brain infection, symptoms pointing to the existence of a cerebral abscess. She consented to going to the hospital the following day. I observed vertigo and accompanying nausea and learned that she had had several chills, and I considered her condition a desperate one. Fortunately for all concerned, she died peacefully at her home that night. Very severe pains came on about 10 p. m., and her family physician administered one-quarter grain morphine hypodermically, repeating with one-sixth grain an hour later. She died in coma about four hours after the last injection.

Autopsy. The dura over the under surface of the right frontal lobe was much thickened and adherent to the meninges and brain tissue by well organized plastic lymph. In the center of the frontal lobe was an accumulation of thick pus in a cavity of less than a drachm. The wall was very thick, and leading off toward the median line was an indurated sinus. This could not be traced but a short distance, but is strongly suggestive of infection by way of the cribriform plate.

The meninges were otherwise normal, nor was there any involvement of the cerebellum as indicated by the suboccipital pains. None of the sinuses were involved. The dura over the temporal bone was normal. Within the mastoid cells were dark granulation masses, but no pus accumulation. Acessory sinuses not explored, as our examination was limited strictly to the brain.

Death under morphine narcosis is not rare in such lesions, but I do not consider the drug responsible. In this instance it prevented a surgical procedure which could not but have ended disastrously.

Case III. Ozæna; acute accessory sinus infection; meningitis; death.

Girl, æt. 16. Family history negative. For several years had been afflicted with ozæna in most aggravated form. I treated her for a short time with decided benefit, but as she became absorbed in office work, she neglected herself and worked persistently under what seemed a most severe nervous strain. In this condition of lower vitality she contracted an unusually severe influenzal coryza. I am indebted to the family physician for notes, as I did not attend her.

Excruciating frontal pains were present from the beginning. The temperature fluctuated about 103° F. Restlessness was a pronounced symptom. No pus discharge from nares, and ears normal.

After the seventh day there was vomiting with chills and focal symptoms; strabismus, stiffness of the cervical muscles, etc. She died on the tenth day.

Diagnosis. Purulent meningitis. The source of infection was the nares, probably through lymphatic or venous channel, with empyema of frontal and probably ethmoidal sinuses.

Case IV. Chronic intermittent purulent catarrh; operations on septum and adenoids; latent empyema; fatal meningitis.

Girl, æt. 10, of excellent constitution and free from any of the development dycrasiæ. She was in perfect health up to the age of 7—three years prior to first consultation—when she had what the mother called "a gathering" in her head, the discharge of pus from the nares being copious. Since that time she has had frequent colds with muco-purulent discharges and severe headaches. Her facial expression was that of one who suffered much from headaches, and she was less vivacious than formerly.

I saw her for the first time in January, and found that she had a subacute otitis media, from which she recovered, but the hearing remained somewhat impaired, a result attributed to the general nasal catarrh.

In February, two weeks later, I removed by saw a septal spur which completely blocked the left naris. It extended from the floor to the level of the middle turbinate. The operation was performed under cocaine anæsthesia and was without particular incident. (It is my practice to sterilize instruments, but I use with care nasal antiseptic sprays, believing that the muco-periosteum, bloodless

after cocaine application, is chilled by any system of thorough spraying, and inflammatory reaction is invited. But all collections of catarrhal deposits are washed away by normal saline spray under low pressure.) The patient was carefully watched for a week at her home, and at no time was there any local inflammatory reaction nor fever. In ten days the septum was quite healed.

About a week later I removed adenoids from the naso-pharynx, and by the end of the month the patient seemed decidedly improved in general condition, hearing, voice, and free nasal respiration, and attended school part of March. She still had headaches however.

The family lived in a block of houses, which were not healthful, and I had attributed the occasional malaise in part to the environment. I did not see her after March 24, at which time there was little or no catarrhal discharge or evidence of local disease.

During May I was out of town, and on my return, June 10, learned of her death. Symptoms of acute disease developed during the latter part of April. Headaches, frontal and temporal, and a gradual rise of temperature finally culminated in a condition indicating abscess formation, probably in an accessory sinus, and meningitis. At no time was there a purulent discharge from the nares, but the odor of the breath became very foul. Judging from the description by physicians and nurse, there was metastatic abscess formation in the bowels—pain, tympanites, and purulent stools that were very fœtid. The diagnosis of attending physicians was tuberculous meningitis, but this seems to me an error. It was probably a case of latent empyema, the original infection having occurred three years before. Leptomeningitis with sinus thrombosis and metastasis followed an acute exacerbation. From my knowledge of the case, I cannot designate the accessory sinus involved.

An important question is the relation of the operations to the fatal sickness. Two months intervened, and there seems a remote connection between them as cause and effect. Latent empyema of accessory sinuses is a most serious condition from the surgical standpoint. There is usually an abnormality or intranasal deformity which seems to be responsible for defective drainage of the diseased sinus. Any operation on the person of one who has a concealed focus of infection is dangerous unless the operation reaches and drains the infected region.

The diagnosis of latent empyema is impossible in the presence of structural deformities which prevent inspection of the upper and posterior nares, and yet the operation must be undertaken with full realization of the gravity of any surgical disturbance.

Case V. La grippe; coryza; otitis media purulenta; cerebral abscess; death; autopsy.

Patient of Dr. C. E. Beardsley seen in consultation.

Man, æt. 57, general history negative; March 12 and 13 unusually severe coryza. Sneezed almost constantly for two days. Fever and malaise with severe headache.

March 17, exposed to inclement weather while yet suffering from symptoms previously noted.

March 18, O. M. P. A. Pain in left ear and temporal region. Free discharge of pus and blood from ear relieved ear pain. Temperature rapidly increasing to as high as 107°, remaining most of the time 103° to 105°.

March 20, Aphasia, delirium, alternating with stupor. Paralysis of the right arm came on two days later, soon followed by paralysis of the right leg.

March 23. Mind fairly clear at times and he indicated by signs what he wanted. Left ear suppurating freely. No external evidence of mastoiditis. He died March 25, less than two weeks after the initial grippe coryza, and seven days after the first ear symptoms. Diagnosis, meningitis; cerebral abcess, involving temporo-sphenoidal lobe.

Autopsy by Dr. C. E. Beardsley, Ottawa. Pus found in mastoid cells. All sinuses contiguous to temporal bone free from thrombi. Brain tissue softened about fissures of Rolando and Sylvius, the whole anterior part of temporo-sphenoidal and under surface of frontal lobes being easily washed away by a gentle stream of water. The meninges of the whole left cerebrum were bathed in pus.

This case is reported in brief as an illustration of probable direct infection of the brain. The nares and naso-pharynx were primarily involved and through lymphatic or venous channels and eustachian tube the brain was invaded and also the ear. In other words it would seem to me irrational to classify such a case as one of otogenic brain disease, but I would rather favor the opinion that there were two coincident regions of infection from nares or naso-pharynx, *i. e.*, brain and ears.

Comments. This group of case reports lack that accuracy of detail which is essential to the scientific study of such an important subject. But one lesson is clear, and it emphasizes what we see every day in the practice of otology. Nasal and accessory sinus disease is very commonly associated with, or a cause of, acute and chronic ear disease, and likewise such disease is not rarely the source of meningeal infection. And yet in serious cases, in which surgical

intervention is resorted to, how frequently this cause is overlooked, or at least how rarely reported.

Concerning ozæna, as a factor in purulent mastoid disease and meningeal infections, I am convinced that it is a very important matter. Simple mastoid operations can scarcely be expected to do well with such a complication; and certainly in pyogenic brain diseases, supposed to originate from the temporal bone, the possibility of direct meningeal infection, from ulcerated nasal mucous membrane and eroded bones, and accessory sinus empyema, should be carefully considered before attempting surgical procedure by way of the mastoid. The prognosis is in all such complicated cases very bad, and the important thing is to take it into consideration in deciding on the advisability of mastoid or more extensive operation. In other words, the nares and accessory sinuses should be studied quite as carefully as the temporal bone, as factors in the prognosis of mastoid diseases and as a medium of intracranial infection.

SUPERNUMERARY TEETH IN THE NOSE AND THE MAXILLARY SINUS.

BY J. M. INGERSOLL, A.M., M.D., CLEVELAND, O.

Lecturer on Oto-Laryngology in the Western Reserve University, Cleveland, O.

Supernumerary teeth are teeth which are developed in excess of the normal number, and may grow in any part of the body where the germ cells, from which the teeth are developed, may happen to be deposited. A well known example of this phenomenon is the growth of one or more teeth in a dermoid cyst.

Impacted teeth begin their development in a normal or nearly normal position, but through undue hardening of the surrounding bone, before complete eruption of the teeth, they become incased and it is impossible for the eruptive force to carry them into their proper position. They are often held in the place of development, or are pushed in the direction of the least resistance, and appear in an abnormal position. Such teeth are sometimes incorrectly described as supernumerary teeth.

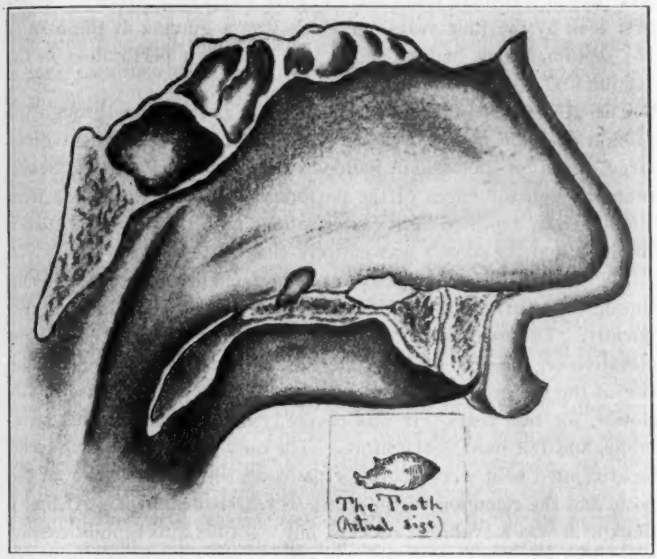
Recently I saw a case of impacted teeth in a boy four years old. He had been complaining of pain in the right superior maxillary region for several months, and the tissue over this region was much inflamed. There was also a slight exophthalmus on the right side and nasal respiration was obstructed. The condition was thought to be due to the teeth, as the two upper molars on the right side had never been erupted. Dry heat was applied locally and at first the condition seemed to improve, and then grew worse. The right nasal fossa became occluded by the swelling of its external wall.

The child was anæsthetized and an opening made through the right canine fossa, liberating some foul pus. My first thought was that this had been a case of true antral empyema (with retention). Bare bone could be felt in the cavity, and in curetting it two small molar teeth were brought out. Then the diagnosis of impacted teeth was made. In so young a child the antrum is very small, and in this case the cavity containing the pus and the teeth was probably a dentigerous cyst.

The point of chief interest in this case is that the dentigerous cyst occurred in connection with the deciduous teeth. Such cysts occur most frequently with permanent teeth, occasionally with supernum-

erary teeth, but very rarely with the deciduous teeth. The disease may occur in either jaw, but it is more common in the upper jaw.

Supernumerary teeth may grow in the nose or in the antrum without causing any decided symptoms, except facial neuralgia, and as long as they are well nourished, may remain undiscovered. Such teeth, however, are frequently poorly developed, and tend to become loosened or necrotic, and then act as an irritant to the surrounding tissue.



I have seen one case in which there was a supernumerary tooth in the maxillary sinus which was not discovered during the patient's life. The patient was a well-developed man in good health, except that he suffered from a persistent neuralgia on the right side of the face. At times there was some tenderness over the right antrum, but there were no other indications of any antral trouble. The nose was normal. The teeth were all in position and in good condition.

The man developed a double pneumonia, after exposure in the cold, and died. At the autopsy the accessory cavities of the nose were examined. In the posterior wall of the right antrum, just above the floor, there was a fairly well-developed molar tooth. The crown of the tooth projected into the antrum; its roots were imbedded in

the antral wall. Otherwise the antrum was normal. The other accessory cavities presented nothing unusual.

This supernumerary tooth was probably the cause of the facial neuralgia. An X-ray photograph of the antrum would doubtless have shown the presence of this tooth, but there was so little indication of any active trouble in the antrum that it never occurred to me to have a photograph taken.

Supernumerary teeth in the nose are rather uncommon, and the course of the following case was of more than usual interest to me. The patient was forty years old, and gave a syphilitic history. When first seen by me four years ago there was a gumma at the base of the septum, which had broken down, causing a perforation in the septum and also in the hard palate.

The necrotic bone, around this common perforation through the septum and the palate, was curetted away, and the patient given large doses of potassium iodide. The syphilitic process healed promptly and the edges of the perforation through the palate were stimulated by repeated light cauterizations until the opening between the nose and the mouth was entirely closed.

The patient was apprehensive of some facial deformity developing through a return of the syphilitic trouble, and so consulted me frequently. Two years after I had first seen the case I noticed a slight elevation on the floor of the right nasal fossa, just posterior to the site of the old gumma. This elevation continued to increase in size slowly, for two years. It was covered with normal mucous membrane, and felt hard to the probe. The only symptoms which could be attributed to it were neuralgic pains all through the floor of the nose, and the retention of the nasal secretions behind it. At first I thought it was a syphilitic process, but vigorous anti-syphilitic treatment had no effect upon it. All of the upper teeth had been extracted more than twenty years ago, so that the possibility of the teeth being in any way a factor in the case was not considered.

One day in examining with a probe, this elevation on the floor of the nose, what was supposed to be bare bone, was felt, and in curetting it, a peg-shaped tooth was discovered and removed. The roots of the tooth were poorly developed and grew from the floor of the nose. Since the removal of the tooth the neuralgic pains have ceased, and the nose is now practically normal, except the perforation in the septum.

The accompanying drawing, which is, of course, an ideal one, as the patient is still alive, was made to show the position of the tooth in the nose.

50 Euclid Avenue.

PRESENTATION OF INSTRUMENTS.*

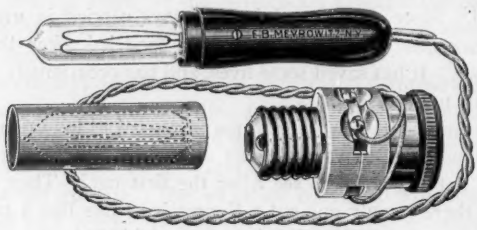
BY CHEVALIER JACKSON, M. D., PITTSBURG.

Fifteen years ago a woman came breathlessly rushing into my office with a cyanosed child in her arms. Breathing had ceased, the face was slate-colored. The mother said the child had choked while eating. I ran a scalpel through the crico-thyroid membrane close up to the thyroid cartilage and turned the knife edge upward. Artificial respiration started the air to hissing in and out, but the bleeding was very free and much blood was being sucked into the trachea in spite of a depended head. A large curved medicine dropper lay on my desk. I pulled off the rubber cap and forced the glass barrel so tightly into the wound that all bleeding was checked and respiration was free, though the quantity of air was not quite sufficient. A piece of meat was removed from the larynx and the recovery was uneventful. Since that time I have always carried in my pocket-case an emergency laryngotomy canula modeled after that medicine dropper. It has saved some lives, and has occasionally rendered tracheotomy unnecessary.

Many members have written to me in regard to my method of inferior turbinotomy. Two questions are asked. First, are the turbinotomes not too large to see after the first cut? They certainly are. But there is only one cut. Successive snips like a tailor cutting cloth are a mistake. The lower outer blade is inserted under the turbinal and is forced in the full length of the intended cut, then the blades are closed and the operation is done at one clip. By reason of the broad bearing surface at the lock, the blades are rigid, without spring, and will shear through bone as readily as paper. Some operators may prefer to snare off instead of clip off the soft end posterior to the bone. After the clip of the turbinotome, the detached fragment is clamped in the seizing forceps with which counter traction is made, and over which the snare loop is threaded. We were all taught that fully an hour must be used in snaring posterior hypertrophies. This is a relic of the thumb screws of the Inquisition. The other question I have been frequently asked is as to primary and secondary hemorrhage after using these instruments. There is no primary hemorrhage; there is no secondary hemorrhage, properly speaking. It is my usual procedure to pack the nostril with

*Presented at the Ninth Annual Meeting of the American Laryngological, Rhinological and Otological Society, Lexington, Ky., April 30, 1908.

a mixture of a solution of adrenalin chlorid and cocain, wait ten minutes, operate, and pack the nostril with moist gauze strips. This packing is removed at the end of 24 hours. The considerable bleeding following removal soon ceases spontaneously, and I have never known it to recur. The vessels contract and retract naturally—not as in the first instance with the aid of cocain and adrenalin,—so that secondary hemorrhage never occurs. About one case in twenty has to be repacked for another twenty-four hours—never a third time, except in hemophiles. The great merit in the turbinotome is speed, five seconds are usually enough, while the old way with saw, scissors and snare may take as many minutes—plenty of time for syncope. The amount of tissue removed is regulated by the position of the handle. In the vertical position almost the entire turbinal will be clipped off. The farther the handle is swung out from the vertical the greater the amount of tissue removed.

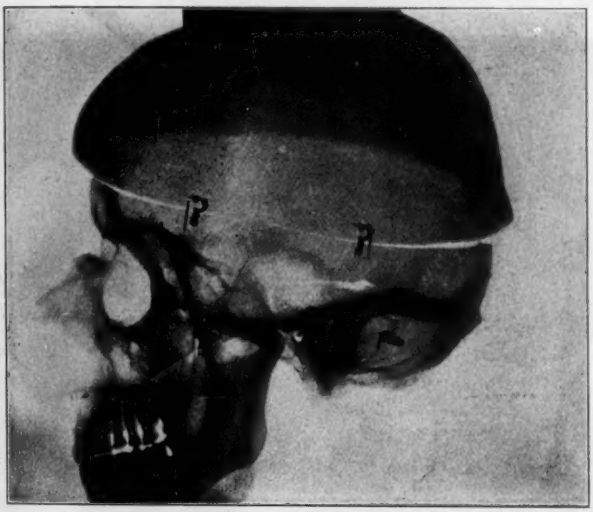


Transilluminator to be used without Rheostat.

In the year 1892, eleven years ago, I devised a transilluminating lamp that I was enthusiastic over. I now pronounce it obsolete. The prevalent skepticism in regard to the value of transillumination is attributable to the use of more or less worthless miniature lamps. I have here a ten candle power lamp which takes the regular 110 volt lighting current without a rheostat. If lighted for more than a minute it will get uncomfortably hot. But you can see all you care to in five seconds with this lamp. When it is put into the mouth of a patient with a normal antrum, there is such a brilliant light spot under each eye, such a bright red reflex from the pupil, and the patient gets such a brilliant subjective sense of light, that there can be no doubt about it. A shell over the lamp adapts it to frontal sinus work. It was made for me by Meyrowitz.

The accident of a detached mass of adenoids falling into the larynx always seemed to me a risk with the Gottstein curette. The

accident only occurred to me once, and that was after I devised this curette four years ago, in an operation in which I used a plain Gottstein in the absence of my own. Apart from safety, it is a satisfaction to be able to satisfy the inquiries of relatives, who are often skeptical as to a "growth" in the throat invisible to their inspection. The spring always entangles the adenoid mass, but *only one sweep must be made.* Repeated strokes will work the mass out of the spring. The remnants can be scraped away without risk with another curette or the finger nail. This is the original instrument. They are now made with a detachable spring for cleaning.

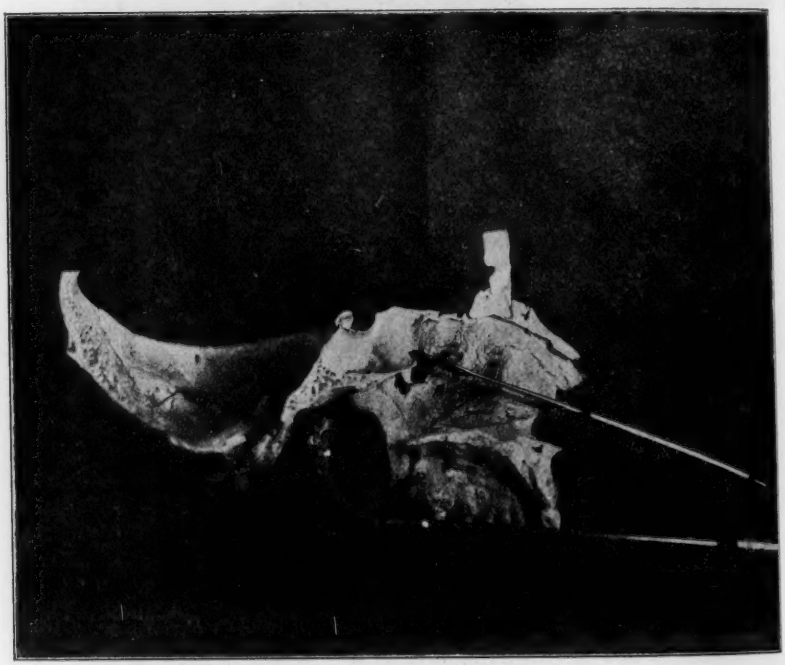


Students chart for mastoidectomy—Reduced.

This trephine has two points of difference from the forms in use. First it has no uncleanable hollow shank. The centre pin slides in an outside slot and readily comes away after the bone groove is deep enough to hold the crown from wandering. Second, it has a ratchet handle which drives the crown always in one direction, cutting faster and throwing the sawdust up and out. Rapidity of cutting is often of advantage in some of the cases encountered by the otologist. This ratchet handle is useful also on bone drills, but I would never expect any one accustomed to the old to and fro instruments to adopt

this feature. The aseptable features, however, will commend it.

The rule for Reed's base line is marked only with points of otologic interest. Placing the plain end of the rule on the floor of the orbit and the "meatus" line at the centre of the meatus, all points on the line are readily laid off. I have here a skiagraph of a skull with lead run in the groove for the sinus, the canal for the facial nerve and the semi-circular canals. It is unnecessary to call your attention to the promontory, oval window and other anatomical details that show so clearly to your trained eyes. We all have just this picture in mind, but the beginner in otology has not. Those of you who teach will find this photograph a godsend to the student when you are teaching him the mastoid operation.



Opening Sphenoidal Sinus by Nasopharyngeal Illumination.

This little naso-pharyngeal lamp I use in opening the sphenoidal sinus. It is inserted into the naso-pharynx, where its bright illumination shows out sharply the superior choanal margin on anterior

rhinoscopy. One centimeter above this apparent margin, the wall of the sphenoidal sinus may be entered with perfect safety. If the point of the opening instrument be forced in at a higher point than one centimeter, caution must be exercised; but if lower, no harm can be done, as there is more than two centimeters of bone in line horizontally to be drilled through before harm can be done. If a cavity is not entered at three millimeters depth, a second trial is made three millimeters higher up than the one centimeter point. Personally, I have never failed to enter the sinus at the first trial at the latter point. Of course it is unnecessary for me to state before such a learned body of rhinologists that all structures, normal or pathological, that obstruct the view must have been previously removed. The lamp was made for me by the Electro-Surgical Instrument Co. of Rochester, N. Y., and it does not get hot.

Malleable Canine Fossa Canula.

In treating maxillary antrum cases it is, in my experience, occasionally necessary to keep the canine fossa opening patulous for a long time, especially in cases with bony necrosis. For this purpose I use a canula made of malleable metal which can be clipped to the proper length before insertion, and the inner end expanded with a small alligator forcep after the canula is in place. This forms a flange on the inner end that prevents all possibility of its falling out during sleep, and getting into the larynx or œsophagus. If uneasy on this score, you can tie one end of a thread to the canula, and the other end to a tooth, allowing some slack. The canula acts both as a speculum, and to maintain the opening until, by actual inspection and the probe, one is certain that the walls of the antrum are healthy. The canula is kept plugged between treatments with a small piece of gauze.

SOCIETY PROCEEDINGS.

FOURTEENTH INTERNATIONAL MEDICAL CONGRESS.*

Held in Madrid, April 23-30, 1903.

SECTION OF LARYNGOLOGY AND RHINOLOGY.

THE following communications were made:

Treatment of Certain Affections of the Upper Respiratory Tract, especially of Vaso-motor Rhinitis, by Hot Air. By DRS. MARCEL LERMOYEZ and GEORGES MAHU. (Paris.)

Conclusions.—At the last international Congress of Medicine (August, 1900), we published a new treatment for certain affections of the upper respiratory tract—in particular, vaso-motor rhinitis and hydrorrhœa nasalis—viz., the treatment by means of super-heated air. The following year (May, 1901), we published the results of further experiments and investigations to the Société Francaise d'Otologie, de Laryngologie, et de Rhinologie.

Several colleagues, both French and foreign, have tried this method of treatment, and have confirmed our results. We ourselves have not ceased to apply the treatment to all cases we considered suitable. Our technique remains practically the same as it was at first, and we can now count in hundreds our cases of permanent cure of vaso-motor rhinitis of all degrees—from congestive rhinitis, with alternating obstruction, sometimes accompanied by tubo-tympanic catarrh, up to hypertrophic rhinitis and hydrorrhœa nasalis.

At the present moment we consider the hot-air treatment a specific for the last-named disease. All obstructions, such as spurs, deflections, polypi, or irreducible hypertrophy of the turbinals, must, of course, be first removed.

The apparatus employed by us from the beginning is manufactured by Collin of Paris. The air can be supplied either from steel cylinders or from a foot bellows.

Progress in the Cure of Defects of Speech. By RAFAEL COEN (Vienna.)

Conclusions.—1. The study of defects of speech made but little progress till after the publication of Kussmaul's works on the subject.

* Reprint from *Journal of Laryngology*, July, 1903.

2. Kussmaul's classical works on this subject were of greater importance from the point of view of etiology and diagnosis than from that of treatment of anomalies of speech.

3. The most recent investigations have had much effect in developing these studies, particularly with regard to the practical treatment of the anomalies in question.

4 The best results have been obtained in the treatment of stammering and lisping, and of the defective speech consequent on cleft palate.

On a Sign which is Pathognomonic of True Chronic Maxillary Sinusitis. GEORGES MAHU. (Paris).

Conclusions.—In a case of probable chronic maxillary sinusitis, if all the classical signs (pus in middle meatus, transillumination, puncture or lavage through the inferior meatus) are positive, one is justified in diagnosing maxillary empyema, but not chronic maxillary sinusitis. In other words, one cannot say that the pus is secreted in and by the antrum itself; the pus may come from elsewhere—*e. g.*, the frontal sinus—and be merely retained in the antrum, which, however, itself remains healthy.

The prudent surgeon generally hesitates to interfere, and only after he has washed out the antrum several times through the meatus does he decide to open the antrum.

We wish to bring forward a sign (the principle of which was explained at the meeting of the Société de Laryngologie, d'Otologie, et de Rhinologie de Paris, November 12, 1902), which we have found extremely useful in clearing up this point, having made use of it now for over a year. In true chronic maxillary sinusitis the mucosa rapidly increases in thickness even during the early stages, then it becomes spongy and myxomatous, so that *the capacity of the sinus is considerably reduced.* Now, when washing out the antrum through the inferor meatus, after having expelled all the pus, let the patient sit with his head erect, drive the piston of the syringe so as to completely empty the syringe, then gently draw back the piston so as to suck all the water out of the antrum; the quantity of water thus withdrawn will give you the cubic capacity, not of the whole antrum, but of the antrum up to the level of the ostium.

From our experiments, both *in vivo* and on the cadaver, we conclude that when the total quantity of liquid withdrawn in this manner is less than 1½ cubic centimetres, the case is one of true chronic sinusitis. This holds good in the greater number of cases, no matter what capacity the given antrum would have in a healthy condition.

Etiology of Ozaena. By W. FREUDENTHAL (New York).

The paper gives a short account of earlier work: present state; theory of local affections; empyema of accessory cavities; theory of infection; the author's personal researches on retronasal catarrh and atrophic rhinitis (ulcus perforans of the septum; anterior atrophic rhinitis of Siebenmann-Ribary; epistaxis, especially in winter and after prolonged acute illness); effect of too dry air on the nose and neighboring parts—(*a*) skin of the head, (*b*) ears, (*c*) lips; principal conditions which combine with atrophic rhinitis to convert it into ozæna.

Conclusions.—1. Ozæna is an atrophy of all the internal walls of the nose due to atmospheric influence, especially to too great dryness of the air.

2. The results of this dryness affect all the internal walls of the nose, neighboring parts, and almost certainly also more distant organs.

3. The bones of the turbinals appear to be affected at the commencement of the disease.

4. To convert this atrophy into ozæna a bacillary invasion *en masse* is necessary.

5. This bacillus can increase and multiply only on a suitable soil—*i. e.*, only where atrophic conditions pre-exist.

6. The bacillary invasion must take place early in order to establish ozæna.

7. This invasion probably always takes place by direct transmission from the vulva.

8. Sinusites are frequently combined with ozæna.

9. Thus, ozæna is an autochthonous affection which supervenes on atrophy.

Is Atrophic Coryza an Autonomous Affection? Diagnosis and Treatment. E. J. MOURE (Bordeaux).

Résumé.—In the first place, it is necessary to settle the several clinical varieties of an affection with regard to which specialists still disagree, in spite of the interminable discussions on the subject all over the world. There is certainly a great divergence of opinion among rhinologists as to the clinical forms of this rhinitis, which some describe under the vague term "ozæna," or "true ozæna," others under the simple name "atrophic rhinitis."

Both these denominations are incomplete, because ozæna may exist without atrophy and atrophy without ozæna. The term "ozænatous rhinitis," although more exact, is descriptive of the affection only in

its early period, when the abundant purulent secretion tends to accumulate in the nasal fossæ and to decompose there. On the other hand, when the pathological process has destroyed all the glands and almost all the osseous tissue, the odor disappears from lack of secretion, but as the atrophy has by that time reached its most advanced stage, the name is no longer suitable.

Again, there can be no doubt that certain coryzas destined to become ozænatous and atrophic commence as a purulent rhinitis, with liquid, inodorous secretion, or, at least, with secretion that smells stale and disagreeable, but not fœtid. At this stage the mucosa is swollen (the hypertrophic stage of certain authors). Here the term "ozænatous atrophic coryza" is not apt, especially as certain purulent coryzas never give rise to true ozæna, although their final stage is one of atrophy of the Schneiderian membrane and turbinal bodies.

Lastly, we all know that of late years certain authors—in particular Grunwald—regard ozæna as originating in sinusites, declaring that if one cannot always discover the sinus affection, the sinusitis is situated where it is difficult to recognize. We cannot admit such a radical opinion, because at the present time the various accessory cavities of the nose are comparatively easily inspected, and I cannot believe that suppuration in any one of them could long escape detection if carefully and repeatedly sought for.

However that may be, we need not be astonished if, with the different forms of the disease to which I have just alluded, treatment should be regarded by some authors as effective, even curative, and by others as absolutely without effect on the disease itself. This divergence of opinion is due, not only to the variety of clinical forms of the affection, but also to the period at which the examination is made and to the age of the patient. No doubt atrophic coryza will offer very varying degrees of resistance to treatment, according as it occurs in the adolescent, the adult, or the aged. Moreover, as Trousseau observed, in spite of considerable or even excessive enlargement of the nasal cavites in old people, one seldom finds a case of true ozæna.

As to the question whether ozæna is an autonomous disease, that can be answered only after considering the different aspects under which it appears. To my mind, it is correct to say that an atrophic coryza which commences in childhood as a rhinitis purulenta, generally accompanied by one or more sinusites, is, so to speak, a secondary affection—an affection which can well be checked if one gets the chance of treating it in its early stages; that is to say, before the atrophic process is thoroughly established or the formation of fœtid crusts has begun.

Again, in certain adults a peculiar form of pseudo-atrophic rhinitis is found—a form that I would willingly call strumous. In it the turbinals are atrophied, the secretion is muco-purulent, with a tendency to the formation of brownish crusts, which, however, are never thick, and do not give off the distinctive fœtor of true ozæna. The atrophy is usually accompanied by the presence of adenoid vegetations (adenoiditis suppurativa), and even by sub-maxillary and cervical adenitis. In this form, too, affections of the maxillary, ethmoid, and sphenoid sinuses are not rare, although not so common as in the preceding form. This I should call a prebacillary coryza, because the same condition of the mucosa is found in tuberculous subjects, in patients with lupus of the face, and even in patients who later will present signs of lupus of the nasal mucosa. Everyone who has examined the nasal fossæ of such patients must have observed that, when the lupus is still confined to the one fossa, the other fossa shows this special form of atrophy of the inferior and middle turbinals, with formation of brownish, non-fœtid crusts. It is, so to say, the initial stage of lupus. This form of coryza is obviously constitutional, autonomous, and inherent in the individual affected.

Lastly, there is the atrophic coryza—which is often congenital, almost always hereditary—characterized, not only by diminished size of the inferior and middle turbinals—often reduced to little ribbons—but also by the presence in the nose of very dark, thick crusts which separate with difficulty only every fifth, sixth, or eighth day, and give off the special odor from which the name ozæna is derived.

Here, again, there is often evidence of sinusites of nasal origin, the teeth of the upper jaw being in perfect condition. In the general run of cases the maxillary antrum is found to contain a grumous, grayish pus of a quite pecular kind. This is obviously the most persistent and obstinate form. It is well characterized. All rhinologists will at once recognize the variety I allude to. The fœtor is due to the nature of the nasal secretion on the one hand and to the considerable enlargement of the cavities on the other.

Treatment.—After what has just been said it is quite unnecessary to spend much time over treatment, and I need scarcely repeat what I said at the meeting of the Société Francaise d'Otologie in 1897. I will sum up the question thus:

1. In the purulent ozæna of adolescents the inflamed and swollen adenoid tissue should be removed, and thereafter the nose irrigated regularly. In such cases I am convinced that massage, followed by a nitrate of silver spray (as recommended by Meyjes), is excellent treatment. Although the mucosa of the inferior and middle turbinals

appears hypertrophied, it ought not to be treated by surgical methods unless it is quite degenerated—*i. e.*, polypoid. Such swellings diminish gradually under suitable treatment regularly applied, whereas resections of the mucosa, cauterizations with galvano-cautery, etc., sometimes give rise to outbursts of acute infection.

2. In the strumous pseudo-atrophic coryza of which I have spoken nasal irrigations combined with treatment of the general condition is all that should be tried. The results are not infrequently quite satisfactory. Of course, if either of these forms of ozæna is accompanied by sinusitis, this must be treated just as an ordinary sinusitis, but the pituitary membrane ought to have recovered nearly its normal appearance before the sinus is touched.

3. Lastly, in the atrophic ozænatous coryyza (true ozæna of Martin) in its active stage, in young children it is best to use only irrigations, etc., of the nose till the patient has reached an age at which more active surgical treatment can be applied—*i. e.*, about the age of six, eight, or ten. Then an attempt may be made to reconstruct the turbinals by means of interstitial injections of paraffin. There is no doubt that this is a remedy, not only for the secretion, but also for the odor. Dr. Brindel has been injecting a considerable number of cases in my clinic by a method which we propose to describe in detail in another communication. After the injections the secretion changes in character, then, as the patient can blow his nose better, the stinking crusts, with which we are all so familiar, no longer collect in his nasal fossæ. The introduction of the paraffin treatment appears to have revived the so-called Zaufal's theory. Indeed, if we just think of what we see in any case of ozæna, we must remember that in a case of well-marked atrophy—given one side quite widely open, the other side more or less obstructed by a spur, deflection, etc. of the septum—the largest crusts and the worst odor come from the non-obstructed side.

There is no doubt that the paraffin method marks a decided step in advance in the treatment of ozæna, especially if, as we have reason to believe is the case, the injected paraffin becomes encysted where it is injected, and the procedure of Gersuny, and still more of Eckstein, will enable the rhinologist to triumph over a disease hitherto rebellious, if not incurable.

Ultimate Results of Paraffin Injections into the Nasal Mucosa in Seventy Cases of Typical Ozaenatous Atrophic Rhinitis.

Drs. MOURE and BRINDEL.

The authors record the results obtained by Dr. Brindel in Dr. Moure's clinique in the treatment of ozænatous atrophic rhinitis by

means of paraffin injections. Seventy cases have been treated, the earliest dating back to February, 1902—*i. e.*, about fifteen months—this considerable number of cases enables the authors to set forth (*a*) the technique of this method of treatment; (*b*) the difficulties met with; (*c*) the slight accidents that sometimes occur; (*d*) the indications and contra-indications; (*e*) the remote results obtained.

The following Instruments were exhibited.

1. A palate retractor to be used *per nasum*.

2. A snare for removing the posterior ends of the inferior turbinals with automatic flexible loop.

3. Dilating aural speculum for cases of atresia of meatus.

4. Punch for tonsils in adults and for imprisoned (*enchatonnées*) tonsils in children.

5. Laryngeal forceps with movable mounts, suitable for most endolaryngeal operations, and interfering very little with the view of the field of operation:

6. Apparatus for paraffin injections at a constant temperature.

ARTHUR J. HUTCHISON, (TRANS.).

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Ninth Annual meeting, Lexington, Ky., April 30, May 1 and 2, 1903. J. A. STUCKY, M. D., Lexington, Ky., President; WENDELL C. PHILLIPS, Secretary.

President's Address.

DR. J. A. STUCKY delivered this address. He said that the society had good reason to be proud of its rapid growth and great achievements in the few brief years of its existence. It had been organized on a broad foundation, and there should be no fence put up to prevent the entrance of those who were loyal to the code and had won their spurs. The existence of this society had shown the wisdom of following the broad principles laid down at its very inception, and at the present day its members recognized no East or West, no North or South, but one brotherhood and one purpose.

Folding Head Band.

DR. S. MACCUEN SMITH, of Philadelphia, exhibited a folding head band, which was convenient because of its great portability. It was not his own device.

New Instruments.

DR. CHEVALIER JACKSON, of Pittsburg, exhibited a skiagraph of the skull; also his emergency thyrotomy canula, an instrument modeled after the ordinary medicine dropper, and used for checking hemorrhage. His turbinotomes were presented, and the statement was made that the operation was done very quickly and did not provoke either immediate or secondary hemorrhage. He made use of cocaine and adrenalin before the operation, and a gauze packing for twenty-four hours after the operation. In about 5 per cent of the cases it was necessary to pack again for twenty-four hours.

An adenoid curette with an attachment for preventing the dropping down of a portion of the adenoid into the larynx, was shown; also some chisels for mastoid operations, and an improved trephine.

A transillumination lamp was presented. It was intended to be

operated by a 110 p. volt current without any reduction of the current. If left in the mouth more than a minute it would become uncomfortably hot, but this time was sufficient for the examination. He was disposed to think that much of the present skepticism regarding transillumination arose from the fact that miniature and very inefficient lamps had been commonly used. The intensity of the light could be easily modified as desired by the use of a rheostat.

Dr. J. M. Ray, of Louisville, said that mistakes were frequently made in examining the mouth because of the difference in the intensity of the light used. With a very brilliant light, like the one just presented, it was probable that it would pass through an antrum even though the latter were blocked with pus.

Dr. C. R. Holmes, of Cincinnati, thought the point had been well taken about the wrong conclusions likely to be drawn from the use of a light of too great intensity. While it was desirable to have an intense light, this should be capable of regulation at will.

Dr. C. G. Coakley, of New York, said that he had never tried transillumination in daylight with such intense illumination; nevertheless he firmly believed that the same amount of illumination could not be used in different persons. If the examination were made in a darkened room a lamp of two or three candle power would give sufficient illumination, although even with such a lamp it was important to have means for regulating the intensity of the light. With regard to the scissors, he would say that he had not found any scissors which would do the work as well as a snare. The scissors occupied much valuable space. For post-nasal work he would not like to use the ratchet instrument, as the sliding attachment would allow of more rapid operating. Some of these so-called hypertrophies were really œdematous masses and could not be secured by a snare without an anæsthetic. The operation with the snare must be done almost instantaneously because of the attendant pain.

Dr. Wendell C. Phillips, of New York, said he had recently had some experience in this field. He liked the forceps exhibited for removing hypertrophied tissue, but the problem was somewhat different in connection with the inferior turbinate, for, in some instances at least, scissors would not take off the bone. He thought Dr. Jackson had underestimated the importance of secondary hemorrhage, especially when removing the posterior portion of the inferior turbinate bone. Personally, he had had far less trouble in this respect since he had adopted the plan of giving the patient a mild solution of adrenalin with instructions to spray the parts frequently with this solution until after the time for secondary hemorrhage had gone by.

DR. L. A. COFFIN, of New York, could not understand how the scissors could be opened widely enough to allow of the removal of the turbinate *with one clip*, and at the same time get into the nostril. Like Dr. Coakley, he preferred the use of the snare. Neither primary nor secondary hemorrhage after operation on the inferior turbinate should be looked upon lightly. For the last few months he had adopted the plan of applying the snare and then putting the patient in another room on his back. From time to time the instrument was given a slight turn, and in time the hypertrophy was removed without bleeding and without pain except on the introduction of the instrument. After the removal of the snare he paid no attention to the portion removed, as it would take care of itself.

DR. JACKSON said that a large experience with his instruments made him feel sure that they were at least worthy of trial. He would positively dissent from the statement that it was possible with his brilliant lamp to fail to obtain a shadow indicating pus in the antrum. The turbinotomes were entered into the nostril while closed, and then expanded.

DR. F. C. COBB, of Boston, said he did not think it was the pus that produced the shadow in an antral empyema, for he had found the shadow quite as dark after washing out the antrum as before. The shadow was produced by the thickening of the mucous membrane resulting from œdema and the polypoid degeneration of the membrane.

Foreign Body In Nose For Thirty Years.

DR. W. L. BALLENGER, of Chicago, presented a specimen removed from the nose. At the time it was supposed to be a rhinolith. The case was one of foul-smelling suppuration of the nose. According to the history, thirty years ago the patient's eye was destroyed by the explosion of a gun. On cutting open the mass removed from the nose, it was found that the core of the foreign body was the breech-pin of a musket.

A Case of Lipoma of the Tonsil.

DR. CLEMENT F. THEISEN, of Albany.

This case was published exclusively in the August, 1903, issue of THE LARYNGOSCOPE, *page 607.*

Retropharyngeal Abscess. Report of Three Cases.

DR. L. C. CLINE, of Indianapolis. *This paper is published in full in this issue of* THE LARYNGOSCOPE.

DR. C. G. COAKLEY commented upon the fact that these cases occurred for the most part in private practice. In the public clinic he frequently saw six or seven of these cases in the course of a winter. These abscesses seemed to originate in some infected lymphatic gland in this region, often as a result of local tuberculosis. A bacteriological examination was not of much importance because of the many micro-organisms found in the throat. He had seen but one case of retropharyngeal abscess in private practice, and that was in a man about 30 years of age. There was no enlargement of the tonsil or œdema of the pillars of the fauces. Incision gave speedy relief. Sometimes these abscesses were secondary to caries of the cervical vertebræ. It was his rule to employ the incision through the mouth, beginning far down in the median line and carrying the incision as far as the swelling extended. The patient's head was then lowered and the finger used to press out the pus. Sometimes this opening closed, required a second, or perhaps a third, incision. Although he had operated several times upon patients almost moribund, he had had no serious complication arising from the passage of the fluid down into the air passages.

DR. F. C. COBB said that he had seen a good many of these abscesses at the Massachusetts General Hospital. It was always well to examine the cervical vertebræ. In young children it was his practice to make a broad incision and take pains to keep this incision open. Apparently the opening had partially closed in one of the cases reported in the paper. There seemed to be very little risk of suffocating the patient by the escape of pus.

DR. S. MACCUEN SMITH, of Philadelphia, said he would like to know what provision Dr. Coakley made to prevent injury to the vessels of the neck.

DR. COAKLEY said that he found the old-fashioned hatchet-shaped gum lancet a useful instrument for opening these abscesses. The abscess usually stood out quite prominently, and the blood vessels were displaced laterally so that there must be comparatively little danger of injuring them by the incision of the abscess.

DR. GEORGE L. RICHARDS, of Fall River, thought these cases were more common than appeared from the records, and that children often died from this condition without its being diagnosticated. He recalled a case in which a child had been brought to his office almost asphyxiated. On passing in his finger he felt the abscess and instantly he opened it with his finger nail, giving the child relief. Although an emergency method, it was justifiable sometimes in general practice as a life-saving measure. He did not think there was

much danger of hemorrhage in operating upon these cases. In incising the abscess he made the incision both upward and downward, sometimes for fully two inches, to make sure that the whole extent of the abscess was laid open. With concentrated peroxide of hydrogen solution on a cotton pledget he then swabbed out the abscess cavity.

DR. W. H. DUDLEY, of Easton, Pa., said that the second case mentioned in the paper recalled one that had come to him with a history of paralysis of one of the ocular muscles. The patient had been on antisyphilitic treatment without benefit, and in wretched condition at the time. Examination revealed a fluctuating tumor of the pharynx, and on incision of this, complete and permanent relief was given.

DR. J. M. RAY, of Louisville, had not found these abscesses particularly rare, especially in nursing infants. Sometimes these abscesses were traumatic, and they were usually situated very low down. In one such case the breast bone of a quail had lodged in the œsophagus, and in the efforts to remove the bone the family physician produced considerable traumatism. Some days later the neck swelled, deglutition became almost impossible, and the patient had that peculiar croaking voice so characteristic of retropharyngeal abscess. The mirror showed a swelling down near the larynx. This was incised and considerable pus evacuated. In another traumatic case a pin had lodged in the larynx of a boy two days before. The pin was deeply buried in the tissues, and was removed with difficulty. A week later the child returned with a circumscribed swelling low down on the posterior wall of the pharynx, associated with much infiltration of the larynx.

DR. CHEVALIER JACKSON said that in opening these abscesses he made use of a bistoury or scalpel, the greater part of the blade of which was guarded by wrapping it with adhesive plaster.

DR. CLINE, in closing the discussion, said that the first case had lasted six weeks and general infection had already occurred, which probably explained the refilling of the abscess.

A Case of Tubercular Laryngeal Stenosis Treated by Tracheotomy.

DR. PRICE BROWN, of Toronto, reported this case. The patient was a man of 31, who had been referred to him on April 2, 1901. He was suffering from night sweats and a frequent racking cough. Tubercle bacilli were not found in the sputum at the time. The left side of the epiglottis was decidedly infiltrated, and the whole

larynx was bathed in muco-pus. An alkaline spray was used daily, followed by menthol and lanolin, and at intervals of a few days an application of a 50 per cent solution of lactic acid was made. By May 12 the patient had improved considerably, both in the local and general condition. On May 13 there was a chill and a rise of temperature to 103° F. The lungs showed fairly advanced tuberculosis. The patient then began living outdoors in a tent. Eleven months later his condition had improved so much that he was admitted to a sanitarium for incipient tuberculosis, although he had been refused admission at the time of commencing the tent life. Nevertheless tubercle bacilli were found in the sputum. On November 10, 1902, the larynx became so œdematous that he felt justified in doing tracheotomy, and high tracheotomy was performed. From the time of the operation the laryngeal symptoms slowly improved. For many weeks now the temperature had remained normal, and the patient had regained his full normal weight. No tubercle bacilli were found at present in the sputum. The tube was still worn, and when the opening was closed with the finger the patient could speak in guttural tones. There were no visible ulcerations in the larynx. After another summer of tent life it was purposed to attempt the cure of the laryngeal stenosis by the use of graduated tubes.

Dr. John A. Thompson, of Cincinnati, thought tracheotomy was indicated in those comparatively rare cases of tubercular laryngitis in which there was extensive infiltration with comparatively little trouble in the lungs. He had seen such a case first about eleven years ago. In that instance the dyspnœa was extreme, and was due to the fixation of the cords by extensive infiltration. Under local treatment this infiltration was absorbed, and instead of dying within a month as had been expected, she was still alive and hearty. The other side of the picture was the danger of infection of the other tissues of the neck by tuberculosis. This was exemplified by another case in which low tracheotomy was done and a laryngo-fissure established. The latter healed readily but the tracheotomy wound became infected by the sputum, and the tissues of the neck broke down very rapidly. The unknown element of vital resistance must always be an uncertain factor in determining whether or not tracheotomy was desirable.

Dr. C. F. Thiesen spoke of a case of laryngeal tuberculosis which had been complicated by a severe attack of grippe. This was followed by such severe dyspnœa that immediate trachectomy was demanded. The trachea was not found in the usual position, but considerably to the left of the median line. On opening it several ounces

of pus escaped from an abscess connected with the trachea low down. The man eventually died some weeks later of a septic pneumonia.

DR. PRICE BROWN closed the discussion. He said that the last speaker's remarks reminded him of a case of abscess of the larynx that he had seen at one time, and in which death occurred during the night. It was undoubtedly important to carefully select the cases.

The Pathology of Ethmoiditis Reconsidered.

DR. EDWARD WOAKES, of London, England, sent a communication on this subject, which was ordered read.

This paper was published in extenso in the July, 1903, issue of THE LARYNGOSCOPE, *page* 511.

The Import of the Salivary and Nasal Secretions in Hay Fever.

DR. D. BRADEN KYLE, of Philadelphia, was the author of this paper.

This paper is published in full in this issue of THE LARYNGOSCOPE.

DR. NORVAL H. PIERCE, of Chicago, said that there seemed to be a law governing infections, which was operative in all cases. A change took place in the body prior to infection with the micro-organism. In Pasteur's well known experiments with chickens certain micro-organisms of a certain virulence were introduced into the throats of chickens and the latter were kept at a certain temperature. Almost without exception when the temperature sunk below a certain point and remained so for some time, active inflammatory changes supervened. Pasteur explained these phenomena by saying that the cold produced in the cells of the chickens a change which permitted the micro-organisms to become active. We were all frequently exposed to infection by various micro-organisms and yet it was only exceptionally that we did actually become infected. Too little attention had been paid heretofore to the chemical changes occurring in the secretions. In the common rhinitis in which the body was subjected to a chill, the chemistry of the secretions was altered, and, as a result, certain substances were formed which were irritants to the mucous membrane. He believed the time would come when one would be enabled to demonstrate that heat and light themselves might produce such changes as were represented by the condition known as hyperæsthetic rhinorrhea. He had a patient under observation who would escape from an attack of hay fever at a certain time of year so long as he wore dark glasses, but on removing them

the attack would occur, and would continue for some time, even though the glasses were replaced. When an ear drum was perforated the original infection played a secondary part as compared with the germs of putrefaction which were introduced through the external auditory canal. The secretions which were the result of the inflammation were decomposed by these putrefactive organisms, which cast off a chemical irritant. The latter in turn reacted on the mucous membrane, and so a vicious circle was established. He recalled a case of a gentleman who had accidentally discovered that if he took two drachms of phosphate of soda after an excess in eating or drinking, this would entirely prevent an annoying pharyngitis, which would otherwise supervene. In another case the taking of bicarbonate of soda into the stomach would bring a rhinitis to a close.

DR. H. HOLBROOK CURTIS, of New York, said that the theory presented in the paper only seemed to explain a certain class of cases. He had collected about 8,000 replies to his circular regarding hay fever, and while he had not tabulated and classified these, he was disposed to believe that hay fever would be subdivided into three classes, viz.: (1) A systemic condition, which might give rise to the winter variety of hay fever, *e. g.*, explosions of uric acid in the blood or the chemical changes described in Dr. Kyle's paper; (2) a local condition in which the application of certain pollens or effluvia precipitated an attack of hay fever, and (3) a neurotic condition. It had been proved that a person who had hay fever, so-called, did not have it if his horse had been thoroughly smeared with vaseline. It had been proved that the irritant was an emanation from the body of the horse, either dandruff or perspiration. The elephant-house of the menagerie was the cause of an acute hay fever in some individuals, while some experienced an attack from the inhalation of any dust. In one case of this kind he had effected a complete cure by removing a posterior hypertrophy of the turbinate.

DR. C. F. THIESEN referred to the very recent investigations of Dr. Dunbar of Hamburg. Dr. Kyle's theory no doubt accounted for many cases of hay fever, but he did not see how it would explain the experiments of Dr. Dunbar. This investigator's laboratory experiments in this field had extended over a number of years, and he had found that from various grains, particularly maize, were obtained a pollen poison, which when introduced into the nostrils of hay fever patients would result in a typical attack of hay fever, even in winter. Again, by innoculating animals he had obtained an antitoxin which would absolutely neutralize his pollen toxin. Further than this, the pollen toxin was introduced into the nose of a number

of persons who had never had hay fever, and the result was negative. We should distinguish between typical hay fever and that designated by the Germans as rhinitis nervosa.

DR. COAKLEY said he had been deeply interested in the paper. Many of the statements made therein tended to confirm the results obtained by Dunbar. This gentleman found that in the interior of the small granules of pollen was a starchy body which was soluble in salt solution and blood serum, and when this was injected it gave rise to hay fever. However, on reading Dr. Dunbar's paper he had been disappointed with the therapeutic results thus far obtained. In atrophic rhinitis the condition was such that there was very little secretion, and hence, very little opportunity for the pollen to be dissolved; consequently there was not much opportunity for absorption.

DR. PRICE BROWN said that he knew a gentleman who had suffered for years from hay fever, and had not been benefited much by any treatment. The speaker had advised him last summer to go to the country and work vigorously during the whole of the hay fever season. He lost his appetite, but suffered from thirst. The thirst he quenched by sucking lemons. He wholly escaped hay fever that time, and this, Dr. Brown thought, would be explained by the theory of chemical changes in the secretions.

DR. S. MACCUEN SMITH said that it had been a tradition in his locality that hay fever could be relieved by taking a teaspoonful of table salt in one or two pints of hot water on retiring. This would not cure all cases of hay fever, but it would certainly abort many of them.

DR. J. A. STUCKY said that he had previously pointed out in a paper on lithæmic nasopharyngitis that these neuroses were often due to intestinal intoxication, and that as a result of a series of urinary examinations he had found that there was an excess of indican in these cases. Continuing this investigation he had since found an excess of indican present in eleven out of seventeen cases. Another matter of interest was that it was exceedingly rare indeed to find hay fever in the laboring classes. In an experience of twenty-two years he had seen it only once, and that in a negro cook, who was cured of his hay fever by sending him out to work on a farm.

DR. KYLE, in closing the discussion, said that he had not stated that all cases of hay fever were dependent upon change in the secretions. The case of hay fever brought on by leaving off the glasses was evidently one in which there was some refractive error or the glasses would not have been worn, and again, if lachrymation resulted from leaving off the glasses, it was easy to understand how nasal

irritation might result. He knew of a whole family who were exceedingly sensitive to the fumes of ammonia, and who could not on that account go near a horse without getting an attack of hay fever. These persons suffered from the inhalation of aromatic spirits of ammonia.

A Case of Bilateral Abscess of the Septum With Well Marked Symptoms of Septicaemia.

DR. W. L. CULBERT, of New York, reported this case. The patient was a man of 31, a cigarette smoker, and a moderate drinker. Five days previous to coming under observation he had contracted a severe "cold." His temperature was 104° F. and his pulse 132, and the skin was clammy. There was intense throbbing pain; the nose was completely occluded; the mucous membrane was loose and there was a boggy and fluctuating tumor. Both abscesses were opened by a vertical and horizontal incision, and the relief was immediate. The cavities were irrigated first with peroxide of hydrogen and then with weak carbolic acid solution, and were then lightly packed. By the next day all of the septic symptoms had disappeared. Five days later the septum appeared normal. The patient brought with him a quadrangular piece of necrosed bone that had been discharged from the nose. The occurence of septicæmia in such a case was not usual, and the etiology of these abscesses was somewhat obscure. The fact that the abscess was bilateral and involved both the cartilaginous and bony septum was also of interest.

A Case of Epiglottic Abscess with Secondary Involvement of the Cervical Glands.

DR. CULBERT also reported this case. The patient was a merchant, 34 years of age, who had consulted him last summer because of painful and difficult deglutition and a sense of swelling in the throat. He was undoubtedly gouty, and had suffered previously from several attacks of quinsy. The anterior chain of lymphatic glands of the neck was swollen and tender. His temperature was 100.5° F., and his pulse 90. The mirror showed a mass at the base of the anterior surface of the epiglottis a little to the left of the median line. There was no tumor or involvement of the larynx. The abscess was opened by the use of a sharp, curved, aneurism needle. Relief was immediate, and the enlargement of the lymphatic glands disappeared within a few days. The extensive involvement of these glands was a point of some interest.

Dr. George L. Richards said that last winter he had first seen a case of abscess of the septum associated with septicæmia. The patient was a physician whose nose had been injured by the breakdown of his carriage. An abscess of the septum developed in three or four days, and it was incised by another physician. The man then developed a temperature of 103° F. and simultaneously a pain in one knee. The condition grew worse in spite of washing out the wound. Finally, Dr. Maurice H. Richardson operated, opening up several small abscesses. It was several months before the patient was able to resume his work. Some of these cases of septal abscess led to considerable deformity of the bridge of the nose.

Dr. C. G. Coakley said that the tendency of the cartilage to break down was very great, and took place quite rapidly. He thought it possible that the piece of bone discharged in Dr. Culbert's case was a part of the anterior portion of the ethmoid. He had advocated the use of the Simpson tampon to hold the parts in proper position, and so prevent deformity.

Dr. W. L. Ballenger, of Chicago, said that the significant fact about the case of septal abscess under discussion was the amount of septicæmia, which seemed to indicate that there had been an extension of the infection beyond the septal part of the cartilage to a part more richly supplied with lymphatics. In his own published case there was bilateral abscess, but there were no marked symptoms of sepsis.

Dr. Culbert closed the discussion. He said that he had been unable to see the patient recently to determine whether or not there was much ultimate deformity. He had incised both sides of the septum largely with the idea of avoiding deformity.

The Relations of the Upper Air Passages to Diseases of the Gastro-Intestinal Tract.

Dr. L. A. Coffin, of New York, read this paper. He said that he had been struck by the large number of his clinic patients who complained only of post-nasal catarrh. The disease *per se* was a local one. The stoppage of the nose at night on the side next the pillow was a common complaint, and was due to hypertrophy of the posterior ends of the inferior turbinate. The pathology was that of a cirrhotic membrane. The commonest basic principle in the etiology was irritation, and this resulted in hyperæmia. The circumscribed area affected was against the view that the condition was the result of general toxæmia. As the anterior nares frequently escaped the disease altogether, it was evident that one must look elsewhere than

to the inspired air. Children who seldom had great structural deformity of the nose, were quite as frequently affected with post-nasal catarrh as were adults. The author believed the chief cause of the pathological condition under discussion was the irritation resulting from the eructations of gases from the stomach. He believed that in considering chronic follicular pharyngitis and naso-pharyngitis as frequently secondary to chronic indigestion, one took a logical position, and that better results would follow from treatment founded upon this assumption. Hyperacidity was a most common cause and the reason it was overlooked was that the great majority of these persons gave no symptoms pointing to gastric disorder. A series of cases had been examined by modern methods for stomach disorder, and the results noted and compared with the examinations made of the upper air passages.

Dr. Joseph White, of Richmond, said that while he had been deeply interested in the paper, he did not feel fully convinced by the author's statements and reasoning. When a medical student he had been taught that all troubles of the nose, pharynx, larynx and tonsils were invariably dependent upon disorders of the digestive apparatus, and especially of the liver. The digestive apparatus was subsequently relieved of some of this onus by the theory that rheumatism was the basis of many of these affections of the upper air passages, and then, in turn, disorders in women, and smoking and drinking in men were also held to be etiological factors. Mere refrigeration was, as a rule, nothing more than a defective circulation of the skin, although perhaps dependent upon digestive disorder. The same was true of many of these other affections, because they were dependent upon circulatory disturbances of the same general nature. The old teaching was to give a calomel or saline purge, followed by the local or internal use of chlorate of potash, and many physicians still maintain that this is good therapeutics to-day.

Dr. W. L. Ballenger said that so far there did not seem to be any exact evidence as to the relationship between the upper air passages and the disorders of the digestive tract, most of the literature on this topic presenting assertions rather than arguments. The naso-pharynx was a region richly supplied with lymphoid tissue, and the region was, embryologically speaking, quite complex. Such tissue was of comparatively low vitality, and hence more liable to inflammatory disturbances. This was probably one biological factor in the consideration of naso-pharyngeal catarrh. The lymphoid tissue of children was especially prone to inflammation on slight irritation, and hence it did not follow that the frequency of post-nasal catarrh in

children was due to eructation of gases from the stomach and the regurgitation of irritating fluids.

DR. F. C. COBB asked if these cases had been followed, and whether the catarrh had improved as the condition of the stomach had improved.

DR. MACCUEN SMITH said that the paper was very important, and emphasized the statement made in the President's address concerning the necessity of a physician having a good knowledge of general medicine before taking up a specialty. So-called "bilious spells" were often associated with coryza and hoarseness and more or less pain, and the patient at the same time became weak from intestinal intoxication dependent upon absence of the bile. These cases would improve wonderfully if given 1-10 of a grain of calomel every half hour for about ten doses, and followed this the next morning by a saline. After this he was accustomed to give half a grain to one grain of mercury and chalk every night for some weeks; it could be kept up even for months without any accumulative effect from the mercury. Many cases of dry throat would improve wonderfully from giving hydrochloric acid twenty minutes after a meal, instead of immediately after the meal. In persons suffering from frequently repeated attacks of coryza the underlying condition was often an intestinal intoxication. High injections into the colon of luke-warm normal salt solution often proved beneficial.

DR. J. A. THOMPSON said that he had seen cases of marked laryngitis which had proved absolutely rebellious to tretament until hyperacidity of the stomach had been diagnosed and properly treated. Clinical experience was the court of last report in medicine, and he should, therefore, give such experience its full weight. The regurgitation of irritating secretions during sleep was often responsible for pharyngitis and rhinitis. A little over one year ago a patient had come to him with a superficial ulceration on the tonsil which did not resemble either syphilis or tuberculosis. The case was on his hands for months; at one time healing and at another breaking down. The conclusion was finally reached that the recurrence of the ulceration was due to the stomach, and a chemical examination showed complete absence of hydrochloric acid in the gastric juice. When this acid was prescribed internally the ulceration was speedily and permanently healed. He believed that if in obstinate cases of local inflammation the stomach were more carefully interrogated the key to the trouble would be discovered.

DR. LEWIS C. CLINE felt that if this line of investigation were pursued more generally there would be much less of the saw and

cautery. The time had come when careful study of the secretions and better general treatment were demanded.

DR. PRICE BROWN thought that a great deal of this naso-pharyngeal trouble was respiratory in origin. If one made sure that the nasopharynx was free from hypertrophied tissue little else would be demanded, except some attention to the general health. The reader of the paper had spoken of otitis media as frequently resulting from the vomiting of children. While this might be so in many cases, in many others it was due to the presence of adenoid tissue.

DR. L. A. MCCLELLAND, of Brooklyn, said that he had often noticed that cases of acute and chronic pharyngitis would improve very rapidly under large doses of calomel and jalap, followed by salines, and that under this treatment very little local treatment of the nasopharynx was called for.

DR. DUNBAR ROY, of Atlanta, said that it was in the nasopharynx particularly that he understood the author of the paper maintained that digestive disorders exerted their influence. Undoubtedly nasopharyngeal catarrh was often the result of stomach disorder, but he had met with cases of nasopharyngeal bursitis again and again as a distinct entity. The nasopharyngeal catarrh having this foundation could be relieved in most instances, but nothing more could be accomplished. Persons who were chronic drinkers were well known to suffer from chronic nasopharyngitis, as well as a catarrhal condition of the stomach. In such cases no other treatment was required but a withdrawal of the stimulant.

DR. C. G. COAKLEY said that if Dr. Coffin had done nothing more than called attention to the fact that some other part of the body required treatment besides the upper air passages, he would have given the members of the society a good deal to think about. It had occurred to him that many of the affections of the nasopharynx associated with digestive disorder were not necessarily produced by the gaseous eructations or by the regurgitation of irritating fluids. In his opinion, altered secretions were more directly responsible for the conditions under discussion.

DR. WENDELL C. PHILLIPS, of New York, said he quite agreed with the last remark of Dr. Coakley regarding the effect of eructations, either in infancy or in later life. It was now well known that suppuration of the middle ear was always due to the introduction of septic material into the Eustachian tube; hence the case reported in the paper did not prove that eructations were responsible for the otitis. He would recommend that calomel and a saline should be administered coincidentally, that is, give half a drachm of bicarbonate

of soda every half hour or hour for several hours, and at the same time give the calomel in doses larger than one-tenth of a grain. At the present time he gave half a grain of calomel every hour until two or three grains had been administered, and at the same time gave large doses of the bicarbonate of soda.

Dr. J. A. White said that while he thoroughly appreciated the paper, it unfortunately dealt with a subject which could not be presented with scientific exactitude. He would like to know why the author excluded the consideration of the possible bad effect upon the stomach of the swallowing of the irritating secretions from the nasopharynx, when he was at the same time contending that the irritation from the stomach caused so much mischief in the nasopharynx. Personally, he was disposed to think that gastro-intestinal trouble arose from the condition of the upper air passages, and not that the reverse was true.

Dr. C. F. Thiesen emphasized the need for great general knowledge among specialists, quoting Virchow's comparison of the specialties to the offshoots of a tree, the trunk being general medicine.

Dr. Coffin closed the discussion. He said that he had endeavored to eliminate to æmia from the paper, and hence, the throat which was benefited by the administration of calomel was not the kind of throat that he was trying to describe. The subject, though old, did not seem to him to have attracted the attention that it merited. In reply to Dr. Cobb's very pertinent question as to the ultimate results, he would say that the cases sent to the stomach specialist had been selected because there was a practically normal structural condition of the nose and throat. He was particularly interested in the remarks made by Dr. Thompson concerning the cases of diminished acidity, for, he had not been able to gather sufficient evidence about these cases.

(*To be continued*)

THE LARYNGOLOGICAL SOCIETY OF LONDON.

Eighty-Third Ordinary Meeting, June 5th, 1903.

P. McBRIDE, M.D., F.R.C.P.Ed., President, in the Chair.

The following cases and specimens were shown:

Large Post-Pharyngeal Swelling in a Girl aet. 9.

Shown by MR. WAGGETT. The right side and posterior wall of the œsophagus was pushed forward by a rounded mass the size of a pigeon's egg. A number of enlarged glands were present below the angle of the jaw on the right side. The child had been quite well until attacked by measles three years ago. Enlargement of the cervical glands was noticed soon afterwards, and nine months ago the large pharyngeal swelling had first been noticed, and this had latterly increased in size, causing some difficulty in breathing during sleep. The child appeared to be in good general health. No lesion was detected in the lungs, spleen, or lymphatics elsewhere. No family history of tubercle.

DR. FOSTER MAGGEAGH thought that it was a chronic retro-pharyngeal abscess which had existed for some considerable time, probably tubercular in origin. Incision, he thought, would give relief.

DR. SCANES SPICER thought that usually in a retro-pharyngeal abscess there was a more gradual shading off of the swelling into the surrounding tissues.

DR. HERBERT TILLEY thought there could be no question as to the nature of the swelling; it seemed to possess all the characteristics of a retro-pharyngeal abscess, and was probably due to suppuration of a deep cervical gland, the pus from which had found its way behind the posterior pharyngeal wall. The gland in question might be tubercular or not. He had recently seen two such cases; the first supervened within a week of the removal of tonsils and adenoids by the medical attendant. High temperature and general symptoms of septic infection characterised the case. At the operation the retro-pharyngeal swelling was found to consist of an acutely inflamed gland, which would probably have suppurated in the course of a few days. The second case was under his care at present, and was noticed at the time the operation for removal of adenoids was undertaken.

DR. DE HAVILLAND HALL said that in most cases of retro-pharyngeal abscess the swelling was in the centre, but this seemed to be rather on one side.

SIR FELIX SEMON was not so certain that this was an ordinary retro-pharyngeal abscess. It had not the usual smooth semi-globular appearance of such a one, but there were dimples on the surface. It might be a tubercular mass broken down in parts, or even a case of sarcoma. As to the operation for the removal of adenoids being *followed* by retro-pharyngeal abscess, in his own practice he had never seen such a claim of events, but he had seen two cases in which there was a *co-existence* of retro-pharyngeal abscess with enlarged tonsils and adenoids; the abscess in these cases had, of course, to be evacuated before performing the operation on the tonsils with adenoids.

MR. CHARLES A. PARKER thought this was a case of retro-pharyngeal abscess. With regard to Dr. Tilley's question, he had seen one case of retro-pharyngeal abscess commencing one month after the operation for removal of tonsils and adenoids; but in this case the patient had developed measles a fortnight after the operation, so that it was quite likely that the abscess was secondary to measles, and not due to infection after the operation.

MR. E. B. WAGGETT, in reply, said one could not lightly dismiss the idea of a sarcoma, but he believed that the *mass* was a very large mass of tubercular glands. The enlarged cervical glands were observed three years ago after an attack of measles, while the pharyngeal mass made its appearance much later. He proposed to attack the case by an external operation.

Case of Swelling in Post-nasal Space (Shown at last meeting).

Re-shown by DR. FURNISS POTTER. When seen in May last there was a swelling occupying the right half of the naso-pharynx, and completely obscuring the right choana. Under the administration of potassium iodide and mercury the infiltration had completely dis- the right Eustachian cartilage appeared to be somewhat larger and the right eustachian cartilage appeared to be somewhat larger and redder than the left, and there was still slight drooping of the right half of the soft palate.

Case of Supra-nasal Cyst in an Infant 15 Months Old.

Shown by DR. WYATT WINGATE. The cyst was present at birth, and had gradually increased in size with the infant's growth. It was about the size of a small haricot bean, situated in the middle line

of the bridge of the nose. The base was apparently attached to the periosteum of the nasal bones, but not to the superjacent skin. No dimple or cleft in the osseous suture could be felt, nor any evidence of intra-cranial connection. It did not vary in size, shape or tension during crying.

Dr. Wingrave considered it to be a simple dermal cyst, and asked for opinions as to the expediency of dissecting it out.

Case of Gumma of Epiglottis.

Shown by MR. P. DE SANTI. The patient, a married woman æt. 32, attended the Throat Department of Westminster Hospital on April 23, complaining of great pain in swallowing and some dyspnœa. The symptoms had been coming on gradually for six weeks, and latterly the patient had been feeling very ill.

Examination of the larynx revealed a very large, red, angry, œdematous swelling of the whole of the epiglottis. No view of the cords could be obtained. There was no history of cough, and examination of the chest showed nothing abnormal.

The patient had been treated eight years previously for syphilis.

A provisional diagnosis of gumma of the epiglottis was made, and the patient put on iodide of potassium.

After a week's treatment the swelling began to lessen, and now there was scarcely any swelling to be seen, just a little thickening remaining on the left side of the epiglottis.

Enormous Fibro-Lipoma of Larynx.

Shown by MR. P. DE SANTI. The specimen included the thyroid bone, larynx, and first ring of the trachea. At the posterior aspect of the larynx, to the left of the middle line, was a large pendulous tumor measuring seven and one-half inches from above downwards. It was covered by the mucous membrane of the pharynx. It consisted of three distinct parts—two upper portions closely resembling each other, and separated by a deep sulcus. The right one of these was continuous with the left side of the epiglottis by a band of mucous membrane, and it sent a prolongation into the upper aspect of the larynx. It had been bisected. The cut surface looked like fat, but on close examination bundles of fibrous tissue were seen passing through it. The largest part of the tumor was rounded in shape, measured rather over five inches in length, and was connected with the two upper portions by mucous membrane. Anteriorly, where

it was attached to the wall of the œsophagus, it was not covered by mucous membrane. Its cut surface was similar to that of the portion already described.

History. J. A., æt. 80, a robust man of active habit, was admitted into Westminster Hospital in 1853 About twelve years before, he suffered from occasional fits of choking, especially marked when he became excited. This increased in severity, and a swelling was noticed in the throat. Four years before death, during vomiting, a large mass protruded from the mouth, and the patient had to return it as speedily as possible to prevent suffocation. Sometimes he could swallow solids better than fluids; he was fairly comfortable if he took food slowly. The voice was husky, and during excitement often became inarticulate. The patient died suddenly whilst smoking, and it was presumed that the fumes of the tobacco produced sudden cough with displacement of the growth and suffocation.

At the post-mortem examination the viscera generally were found to be healthy. In addition to the tumor preserved in the specimen several small ones were noted in its immediate neighborhood.

Microscopic examination showed the growth to consist of fat, arranged in part in layers separated by fibrous tissue. The mucous membrane covering the growth is separated from it by a capsule of connective tissue.

The PRESIDENT said that some years ago he had several cases of fibro-lipoma of the larynx, and in one of them there was a recurrence—a tumor of the size of a bantam's egg grew from the top of the upper surface of the epiglottis. This he removed, and after some months recurrence took place, and he removed another tumor just as large. What especially struck him about this case (and another which he reported at the same time) was the small amount of symptoms produced in proportion to the size of the tumor. At the time the literature on the subject was very scanty, and he was sorry to say it had not much increased even yet. He thought this subject of lipoma of the larynx exceedingly interesting, and one which he fancied was very little touched upon, owing to the fact that there were very few cases on record,-and that the material was insufficient.

SIR FELIX SEMON said that he had been informed that in the *Transactions of the Pathological Society* for 1853 an illustration of this specimen was published, but there it lay buried and little accessible to specialists, both in this and other countries. He thought it would be a good thing if permission could be obtained from the Council of the Pathological Society to reproduce this illustration in the Proceedings of their own Society, where it will be welcomed

abroad generally as well as to themselves. He therefore proposed that they should approach the Pathological Society with this end in view.

DR. DE HAVILLAND HALL seconded the proposal of SIR FELIX SEMON, which was carried *nem. con.*

Case of Infiltration of Soft Palate. (Cause?)

Shown by MR. F. J. STEWARD. George W—, æt. 39, stevedore, came to Guy's Hospital in August, 1902, suffering from a quinsy on the right side. This was opened, and at first the patient seemed to be doing well. A month later, however, the soft palate was still infiltrated, and the uvula was somewhat œdematous. This improved at times and again relapsed, so that on the whole little change took place.

In January, 1903, some change in the voice was noticed, and found to be due to paresis of the soft palate, which was still infiltrated. As on inquiry the patient admitted having had syphilis twenty years ago, he was given iodide of potassium in increasing doses, and later mercury also. No improvement took place, but rather the reverse.

In March, 1903, a small sinus was found opening in the right supra-tonsillar fossa; this was opened up and quickly healed.

The present condition showed some infiltration of the soft palate and uvula, and complete paralysis of the same parts. The nose, naso-pharynx, and larynx were normal; the knee-jerks were present; the pupils reacted normally, and there was no evidence of paralysis in any other part of the body. There was no complaint of headache or vomiting, the optic discs were normal, and, in fact, no evidence of disease of the central nervous system could be discovered.

DR. DUNDAS GRANT asked if Mr. Stewart had described the condition found on palpation of the posterior nares, or the post-rhinoscopic appearance.

SIR FELIX SEMON said he thought it was a matter of regret that the description of this case was so very brief, and he would like to mention that the palate was absolutely motionless on phonation, and fluids regurgitated. The infiltration was not such a very prominent feature, and additionally in his opinion there was a good deal of simulation in this case. The patient phonated differently on different occasions, uttering sometimes unearthly sounds, and at other times phonated quite properly.

MR. F. J. STEWART said there was nothing abnormal to be made out of post-rhinoscopic examination. In reply to Sir Felix Semon,

he said the only reason that he described it as a case of infiltration of soft palate was that the infiltration appeared first. The palate moved well at first, but in March last it became paretic.

Microscopical Section of Gumma of Nasal Septum.

Shown by DR. PEGLER. The patient was a gentleman æt. 30, who complained of right nasal obstruction following what he described as a "cold in the head," which had lasted long and had not cleared up. The obstruction was of some three months' duration, and at one time a fleshy substance, "half as big as a marble," had been blown into the handkerchief, attended by bleeding. Inspection disclosed a red flattish mass in the right nasal chamber, which, owing to a deflection of the septum to the same side, was completely blocked. The growth was attached to the septal cartilage, and considerably overhung its broad basal attachment. It extended backwards somewhat indefinitely, and reached upwards to the roof of the fossa. From its outer aspect numerous fibrous adhesions extended over to the opposite inferior turbinal. The surface was slightly rough, and easily penetrated by a probe.

The mass was removed under cocaine at one sitting with septum knife aided by scissors and snare, exposing the triangular cartilage; a strong solution of chloride of zinc was applied to all the remaining portions that could not be detached.

The patient was seen but once after this, having to rejoin his company, but he wrote a short time afterwards saying that the nasal passage had filled up again, anc that a small and inconspicuous nodule that had been pointed out in his hard palate had broken down and formed a huge sore. This fact went far to justify a diagnosis of syphilis, which the very beautiful section under the microscope, kindly made for the exhibitor by Dr. Wingrave, seemed to confirm.

The section is "that of a granuloma of the mucous membrane, the connective-tissue framework of which is infiltrated with small round cells, which abound especially towards the circumference; these granuloma cells exhibit a strong tendency to develop into fusiform cells and sclerotic tissue. A few groups of altered racemose glands remain, but there are no giant-cells, and the periphery is enclosed by a limiting membrane destitute of columnar or stratified epithelium. The most characteristic feature of the specimen, however, is the activity displayed by the endothelial layer of the connective-tissue cells of the vascular sinuses and small vessels. The lumen of these latter is in many instances completely blocked by these cell masses,

exhibiting in a remarkable manner the peculiar features of endarteritis obliterans.

Dr. Wyatt Wingrave said, with reference to the histology, that the most characteristic feature of the section was the endoarterial changes taking place. There was complete occlusion of some of the blood-vessels, which was very suggestive of a process allied to syphilitic conditions.

A Case of Laryngeal Fistula.

Shown by Dr. W. H. Kelson. The patient is a man aged about 58, who had cut his throat with a razor in November last, dividing amongst other structures the thyro-hyoid membrane and stylo-pharyngeus, thyro-hyoid, omo-hyoid, and sterno-hyoid muscles, the result being that the larynx had fallen downwards and forwards, and that he could not swallow or speak in an audible voice, though the vocal cords moved perfectly. Suggestions as to treatment were requested.

Mr. Waggett said that Dr. Kelson had allowed him to see the case beforehand, and the man was very eager to have the fistula closed. It seemed to him this would be quite the proper thing to attempt, and it should not be very difficult. The dislocation of the larynx was one of forward rotation rather than of depression. There was no scar tissue holding the organ in its abnormal position, and he believed that after section of the sterno-thyroid muscles it would be possible to bring it up so as to obtain secure suturing to the base of the epiglottis and closure of the pharyngeal fistula.

Dr. Lack was inclined to think it would be difficult to close the fistula from the short examination he had been able to make that day. He suggested that if it were found impossible to close it, it would be well to allow the opening into the larynx to remain, but to sew up the opening into the œsophagus. In this way the man would be able to swallow perfectly, although he could continue to breathe through the external opening.

Case of Thickening and Impaired Mobility of the Left Vocal Cord.

Shown by Dr. Lambert Lack. The patient, a man aged about 58, had suffered from hoarseness off and on for the past nine months. The hoarseness had increased lately, and he was now almost aphonic. The man's general health was good, and he complained of no other trouble.

Upon examination both vocal cords were slightly thickened and congested, but the left cord was more congested, slightly more thick-

ened, and it moved less than its fellow. The rest of the larynx was normal.

The case was shown to elicit opinions as to diagnosis, the suggestion being that the case was probably one of malignant disease. The patient had been treated with iodides without improvement. Was it advisable to wait or to perform an exploratory thyrotomy at once?

The PRESIDENT considered the case one in which doubt as to the cause of defective movement was justifiable. The deficient mobility seemed most noticeable when the patient laughed. The left cord appeared to him thickened. Putting all the facts together, he was inclined to suspect that possibly, if not probably, this might be the commencement of a malignant process.

SIR FELIX SEMON agreed entirely with the President's remarks.

Case of Multiple Sinus Suppuration showing the Results of Operation upon the Sphenoidal Sinus, with Demonstration of a New Instrument.

Shown by DR. LAMBERT LACK. The patient, a woman æt. 25, had been under the exhibitor's care for over two years with suppuration in all the nasal accessory sinuses on the left side. The antrum had been drilled through the tooth socket, and a tube was still retained. The ethmoidal cells were then curetted, and subsequently the frontal sinus was obliterated. Pus still continuing to come into the nose, and to enter the post-nasal space, further exploration was carried out, and it was found that the sphenoidal sinus was full of pus. The opening of the sinus had been brought well into view, as the result of the removal of the ethmoidal cells. As washing out the cavity through a canula inserted into the ostium of the sinus, failed to cure the patient, the opening was enlarged with a Hajek's hook, and the instrument now shown was then introduced, and the entire anterior wall of the sinus was cut away. The operation was easy, and was performed under cocaine anæsthesia without much pain. The opening made was permanent, and allowed free drainage of the sinus.

DR. HERBERT TILLEY asked what treatment the patient was carrying out at present, as there still seemed to be some suppurating foci in the left nasal cavity.

DR. DUNDAS GRANT said that the difficulty with regard to the sphenoidal sinuses was not so much that of making an opening as of keeping the opening, when made, from closing. He asked Dr. Lack

what method he had employed in this case, and whether he had any difficulty in keeping the opening from contracting, and how long ago it was since the opening was made.

DR. LACK, in reply, said that the opening had been made some three months ago, and showed little if any disposition to close. The only precaution he took was the removal of the entire anterior wall of the cavity. The sides and floor of the cavity still remained flush with the edges of the opening.

Pedunculated Tumor Growing from the Region of the Right Tonsil.

Shown by DR. HERBERT TILLEY. The patient was a boy æt. 6 years, in whom a freely movable pedunclated tumor the size of a Tangerine orange was growing from the right tonsillar region. It was first noticed two months ago, when the child complained of choking fits while eating. Since this period the growth had been twice removed by Dr. Williamson, of Earlsfield, but it had rapidly recurred. As seen at present the tumor was freely movable, and could be projected towards the anterior part of the mouth or partially swallowed. The surface of the tumor was red, granular and dotted here and there with small superficial ulcers. It did not bleed when manipulated, neither had it done so when it had been accidentally bitten by the patient, although, as a result of this, small portions of the surface had sloughed off.

There was a small, hard, freely movable gland behind the angle of the right jaw. Dr. Herbert Tilley could not state the exact region from which the growth sprung, because the lad was too nervous to examine without an anæsthetic. It was proposed to remove the growth without delay.

The PRESIDENT would very much like to hear whether any member had seen a similar case. He had not, exactly. He had seen pedunculated growths, but none which recurred in the way this one did after removal.

SIR FELIX SEMON said he spoke at the risk of being a false prophet, but he was practically certain, from both the description of the repeated rapid recurrences after operation and from the present aspect that this was a malignant growth, and the only point which seemed to be an obstacle to this diagnosis, (its pedunculated nature), was, in reality, no obstacle at all. He might perhaps remind the Society of a case published by him ten years ago in the Transactions of the Royal Medical and Chirurgical Society; the specimen was in St. Thomas' Hospital. The case was one of malignant growth of the

thyroid gland, which perforated into the trachea, and from the moment it did so and met with no resistance it became pedunculated. The specimen in the museum of St. Thomas' showed a big mass, very similar to that in Dr. Tilley's case, in the trachea, and a smaller mass besides, which was also pedunculated. In his remarks on the case Mr. Shattock drew attention to the fact that there was a tendency for malignant growths, if they perforated into a cavity where they met with no resistance at all, to become pedunculated. Therefore, having regard to the rapidity of recurrence and ulcerated appearance of the growth in conjunction with this tendency, he had little doubt that Dr. Tilley's case was one of malignancy.

In answer to Sir Felix Semon, Dr. Herbert Tilley said that he thought the growth would not turn out to be one of the most malignant forms of sarcoma, in spite of the fact that it had already recurred twice after removal. Its non-vascular nature and free mobility would suggest a preponderance of fibroid tissue rather than the embryonic tissue associated with the more malignant forms of sarcoma.

SELECTED ABSTRACTS.

Pathology of the So-called Bony Cysts of the Middle Turbinal.—Dr. L. Harmer, Vienna. *Archiv für Laryngologie.* Band xiii Heft 2.

In view of the varying opinions held as to the etiology of these cysts, Harmer undertook an investigation of their origin in Chiari's clinic. His deductions are based upon 17 cases. The history of three of these is given in detail, and in the other 14 the pathological condition is briefly noted. In the first place he decides that only those cavities of the middle turbinal which are large enough to expand the bone and render the condition noticeable to the examiner should be dignified by the name of cyst. It has long been a mooted question as to whether these cysts increase in size. The author is in agreement with B. Fraenkel, who is of the opinion that these turbinal cysts remain unchanged through life. Small cavities in the middle turbinal are very frequent, but so far as known, no author has described a case where unquestionable growth of the cyst was observed. Invariably, if a cyst was observed it was found fully developed. The histological appearance of the lining membrane of these cysts is much against any inflammatory origin of the cavity. In fact, the lining membrane corresponds very closely with that of the ethmoid cells. The author regards the ordinary cyst containing only mucus or air as congenital, and sees in them rather an unusual structure than a pathological one.

It is to be noted that this is said with respect to those cysts which contain only air or mucus; those which attain an enormous size and are filled with pus or cheesy matter are certainly pathological, and their causation is readily understood. It is briefly this: From some cause the ordinary mucous contents of the cyst become infected, and as a result of the inflammation the normal exit is obstructed. Here we have all the conditions for a rapid and pathological growth of the cyst. Harmer proposed, indeed, that these infected and inflammatory cysts should be distinguished from the simple forms by calling them "cystic empyema of the middle turbinal," or "bony cysts with empyema."

At the close of his very interesting and able article the author makes the following résumé of his paper:

Bony cysts of the middle turbinal are rather infrequently seen. They are to be regarded as abnormal variations of the middle turbinal, and are probably present at birth. They are not to be regarded as of inflammatory origin.

Only those cases should be spoken of as cysts where the middle turbinal is unquestionably and plainly expanded into a cyst-like cavity; those cases where the middle turbinal merely contains a small cell should not be so designated. The mucous lining of the cyst is a ciliated membrane. It is very thin and delicate, contains a few glands and is loosely connected with the underlying bone. It therefore very strongly resembles the lining of the accessory cavities, and on account of its delicacy it most resembles that of the ethmoid cells.

An increase in size is observed, if at all, only in such slight degree that no positive clinical or histological proof is at hand.

Inflammatory and polypoid processes very often invade the middle turbinal, but have no demonstrable influence on the cysts. On the contrary, the lining mucosa is generally free from inflammatory appearances, being at most somewhat bathed in serum.

From the ordinary bony cysts are to be distinguished those rare cases in which infection of the cavity, pus formation, and closure of the natural outlet occur. If this happens, the cyst may take on rapid growth and reach a very considerable size. The growth in these cases is caused by the pressure of the pus, which is continually secreted and has no exit, as well as by the inflammation which is in the interior of the cavity and can be demonstrated histologically.

These tumors, in contradistinction to the ordinary bony cysts, are to be regarded as pathological structures, and should be distinguished by a particular name. The so-called mucoceles which attain no great size should be reckoned with the ordinary bony cysts.

Only rarely can a rapid growth supervene on account of inflammation and damming up of the secretion, and in these instances they have the same pathological significance as the empyema cysts.

VITTUM.

Foreign Body in Left Bronchus; Removal by Operation.—T. H. KELLOCK—"Lancet," November 15, 1902.

After tracheotomy a bent silver wire was found more effective than the usual unbending instruments.

STCLAIR THOMSON.

Intra-tracheal Medication in Catarrhal Disease of the Lower Respiratory Tract.—RICHMOND MCKINNEY, Memphis—*Memphis Medical Monthly*, January, 1903.

This paper which the author declares a "preliminary report," his experience with the method not having been extensive enough to warrant an unequivocal declaration in favor of intratracheal medication, is intended to express its favorable effect in several cases. Though the field of therapeutics in the treatment of the lower respiratory tract is large, the treatment resolves itself into a very few drugs suitable to administration in the manner proposed. The basis of intratracheal medication is creosote in some one of its forms. The author's preference is for guaicol combined with menthol and olive oil. This is nearly an ideal formula where there is much muco purulent expectoration indicating necrosis of the epithelium lining the bronchial tubes and alveoli or when there is destruction of the lung tissue itself. The guaiacol exercising its antiseptic qualities, and the menthol at first a stimulant to the diseased mucosa, followed by a cooling and soothing effect, while the olive oil acts as a bland dressing to the mucous membrane. The formula commonly used, is ℞ Guaiacol, m, 10; menthol, gr. 5; olive oil ℥i M. The proportions may be increased as indicated and alboline may be substituted for olive oil. One or two drachms are injected at a sitting, with a Donnellan (Philadelphia) syringe. The frequency of treatment is regulated by the urgency, and usually one every other day is sufficient. F. C. E.

The Treatment of Early Cancer of the Larynx by Thyrotomy, with an Account of Two Successful Cases.—EUGENE F. YOUNGE—"Lancet," November 15, 1902.

Refers to two cases of intrinsic epithelioma of the larynx. The first was in a male, aged fifty-seven, who had been hoarse for twelve months. Tracheotomy was performed one week before thyrotomy. The left cord was excised together with a portion of the left ventricular band and arytenoid cartilage. No recurrence one year and three months after operation.

The second case was a male, aged sixty-seven, who had been hoarse for eighteen months. Tracheotomy and thyrotomy were performed at the same operation. No recurrence one year and two months later.

STCLAIR THOMSON.

Temporary Modified Intubation of the Larynx as an Aid and Safeguard in Operations of the Mouth and Pharynx.—R. S. ROYCE—*Brooklyn Medical Journal*, October, 1902.

The author claims the annoyances of operations in the mouth or pharynx such as inspiration of blood—interruption of anæsthesia, etc., are eliminated by the following procedure. To the usual laryngeal intubation tube is attached a thin lightly fitting tube, that is passed into the top of it. Over this a moderately stiff rubber tube is forced. After the intubation tube is inserted, the free end of the flexible rubber tube if left protruding from the mouth to be introduced into a comocopia lightly filled with cotton on which the anæsthetic is dropped.

LEDERMAN.

Injury to the Larynx by a Dupuytren Pill—GAREL—*Rev. Heb. de Laryngologie, D'Otologie et de Rhinologie.* July 19, 1902.

This unusual accident happened to a young man suffering from secondary syphilis, who, on swallowing a Dupuytrn pill, allowed it to become fixed at the entrance of the oesophagus on the right side. At first, there was a sensation of uneasiness, followed a few minutes later by a violent pain radiating to the neck and to the left ear. A laryngoscopic examination showed the existence of an edema of the left arytenoid, forming a tumor which moved during efforts of phonation and deglutition. The pain was diminished by the use of cocaine and of milk, but ice was of no benefit. The following day, the edema had increased and an eschar could be seen in the neighborhood of the pyriform fossæ. The pain gradually disappeared and later was experienced only when highly-seasoned food was swallowed. In four or five days, the lesion had disappeared entirely, leaving no trace of the burn.

The author attributes the accident not to an excessive dose of corrosive sublimate in the pill, but to the arrest of the medicated substance in the neighborhood of the left arytenoid. It would be easy to avoid such burns in the larynx, and even in the stomach, by the use of a sufficient quantity of water after each pill.

Courtade in 1889 published two similar cases of accidental burning, one of which was caused by a strong solution of corrosive sublimate. The velum palati, the pillars, the throat and the pharynx were seriously affected, but all evidence of the burn disappeared in three weeks.

W. SCHEPPEGRELL.

A Report on Forty-three Consecutive Cases of Diphtheria.—CHAMPION S. GURNEY AND VAUGHAN, A. LL.—*Lancet.* July 26, 1902.

The statistics of forty-three consecutive cases of diphtheria are published to show the value of tracheotomy and free administration of antitoxin in the treatment of this disease. The cases admitted were those suffering from laryngeal obstruction, and many of these were brought here *in extremis.* In these circumstances it will readily be understood that thirty-nine out of the forty-three cases required operation. The total number of deaths will be seen to be ten, out of which five cases—*i. e.,* one-half—were aged between 1 and 2 years, two between 3 and 4 years, while the total number of patients admitted at these ages was twelve and fourteen respectively, thus showing a mortality of 41⅔ per cent. at the former age, and only 14 per cent. at the latter age. But of these forty-three cases it will be seen that twenty-four, or rather more than one-half, had a laryngeal and pharyngeal infection, while fourteen had laryngeal infection alone, with a mortality in the former case of 16 per cent., and in the latter of nearly 50 per cent. It is, however, only fair to state that out of the six deaths occurring in the latter (laryngeal alone) variety, one was due to suppression of urine, two were due to broncho-pneumonia; while of the other three, two patients died from asphyxia, and one from hemorrhage into the trachea, which was started during a fit of coughing within a few hours of the operation. Three cases which recovered had a laryngeal, pharyngeal and nasal infection. All the patients who recovered were examined as late as three weeks after discharge from the hospital for signs of paralysis, and in three only were any present.

Statistics.—The total number of cases was forty-three. Tracheotomy was performed in thirty-nine cases, the result being that twenty-nine of the patients recovered and ten died (one child had ceased breathing before the operation had begun). Paralysis occurred in three cases; all recovered completely. One patient had a pharyngeal infection alone; no antitoxin was administered, and the paralysis occurred twenty-five days after the onset of the disease. One patient had a pharyngeal, laryngeal and nasal infection; 17,000 units of antitoxin were injected, and paralysis occurred on the fifty-fourth day of the disease. In a third case the patient had pharyngeal and laryngeal infection; 6,000 units of antitoxin were administered, and paralysis occurred on the fifty-seventh day of disease Cultures taken in eighteen cases, showed the following result: In five cases there was a pure culture of diphtheria; in six a mixed culture of diphtheria and staphylococci; and in seven pure cultures of staphylococci, or mixed staphylococci and streptococci.

STCLAIR THOMSON.

Subglottic Sarcoma Removed Endolaryngeally with Galvano-Cautery Snare.—J. W. GLEITSMANN—*Med. Record,* July 5, 1902.

The growth occurred in a male 52 years of age, who four months previous to the author's examination, had an attack of hoarseness which came on suddenly one morning on awakening. A dry laryngeal cough existed, and the patient had lost twenty-five pounds.

On examination a growth was seen below the cords, which by its contact with the lower surface of the cords, interfered with their vibration. It filled the larger part of the tracheal space, leaving a small opening posteriorly for respiration. The point of fixation seemed to be anteriorly at the beginning of the trachea.

Under cocaine and adrenalin, the tumor was successfully removed with the author's iridoplateum wire with the Scheck's handle and canula. The verticle bend to the lower end of the loop being 4¾ inches, show the depth of the growth. No ill effects followed the operation, the patients' voice began to improve on the following day, and in two days afterward he was permitted to leave the hospital. A remaining stump of the growth was removed a month later, and the base cauterized with the cautery. Five months later no anomaly of the part could be detected. No enlargements of the glands could be detected at the first examination. The pathologists report accompanies the author's paper. M. D. LEDERMAN.

Chronic Suppurative Disease of the Middle Ear.—J. KERR LOVE—*Glasgow Med. Journ.* July-August, 1902.

The writer has a lengthy paper on this subject and discusses in some detail the various appearances that may be met with and the different lines of treatment which may be carried out. It is impossible to review this practical paper at any length.

A. LOGAN TURNER.

Subcutaneous Injection of Paraffiin Wax for the Removal of Deformities of the Nose.—WALKER DOWNIE—*Glasgow Med. Journ.,* Oct., 1902.

Two cases were shown at the Glasgow Medico-Chirurgical Society, in which about one and two drachms respectively of sterilized paraffin, melting at 104° F. were injected with good results.

A. LOGAN TURNER.

Primary Malignant Tumors of the Nasal Fossa.—M. BOURGEOIS *Revue Heb. de Laryngologie, D'Otologie et de Rhinologie,* Jan. 17, 1903.

The author omits the consideration of benign tumors and limits himself to sarcomas and epitheliomas developing in the nasal fossa. These tumors are divided into epithelial and carcinomatous tumors; the former rarely develops in young subjects while, on the contrary, sarcoma may be found even in infancy.

In spite of the doubt which naturally exists in the etiology, the author believes that we may accept as a causal influence traumatism, chronic inflammation, and perhaps even syphilis. While we can affirm nothing definitely as to the transformation of benign tumors into malignant tumors in this region, the author believes that the pre-existence of benign tumors may be the principal predisposing factor of the malignant neoplasm.

The clinical history of a primary malignant tumor of the nasal fossa may be divided into three stages: (1) the stage of coryza and of epistaxis which are conspicuous in the commencement; (2) the stage of nasal obstruction, characterized by a sensation of intra-nasal tension, with cephalgia and anosmia; (3) the stage of complication, during which the tumor develops and invades the neighboring tissues and organs. The evolution may be slow or rapid; in every case the prognosis is very grve, and in most cases the patient succumbs to a constitutional involvement or intercurrent complication.

The earliness of the diagnosis may decide the fate of the patient. Before making this, we should consider the possibility of a foreign body, rhinitis, hematoma, abscess, meningo-cephalitis, rhino-scleroma, deviations and thickenings of the septum, chancre, syphilitic gumma and nasal tuberculosis.

It is only by a differential diagnosis of the most complete character that we can affirm the malignancy of a tumor, and we can decide its variety only by a microscopic examination.

After having described the ligature of the carotid in this connection, the author calls attention to the inefficiency of the various methods of removing the tumor; he describes the operation of Rougé, of Chassaignac and of Ollier, and indicates the advantage of each of these procedures. The choice of the operation depends upon the location and extent of the lesions. Surgical intervention is usually indispensable but it is well to realize that, in spite of them, malignant tumors of the nasal fossa usually recur.

W. SCHEPPEGRELL.

BOOK REVIEWS.

Diseases of the Ear. *A Text-Book for Practitioners and Students of Medicine* By EDWARD BRADFORD DENCH, Ph. B., M. D., Professor of Otology in the University and Bellevue Hospital Medical College; Aural Surgeon to the New York Eye and Ear Infirmary; Consulting Otologist to St. Luke's Hospital; Consulting Otologist to the New York Orthopædic Dispensary and Hospital. Third Edition, revised; publishers, D. Appelton & Co., New York. Nine colored plates; 170 illustrations. Cloth, $5.00; half-leather, $5.50.

We have always regarded this text-book as the representative American classic on Otology, and the new revised and enlarged Third Edition strengthens our previously expressed opinion.

With the rapid progress in otological surgery, many important additions and revisions have been made in this volume. The author's extensive experience in the operative treatment of chronic suppurative otitis media and of the various intra-cranial complications of middle ear suppuration, qualifies him most especially to present this important subject matter.

The technique of middle ear and mastoid operations and the operative procedures for the relief of sinus thrombosis and of brain abscess are minutely and exhaustively considered and constitute a most valuable and ably presented series of chapters.

Another important revision is the chapter on functional examination. Here will be found carefully prepared descriptions of the Bezold continuous tone series, the use of the Edelmann-Galton whistle and other recent tests for differential diagnosis.

Two colored plates, showing the anatomy of the internal jugular vein and the technique of exploratory craniotomy, are new features in this edition.

Impartially considered, we regard this text book as the best exclusively Otological classic published in America.

M. A. G.

First Principles of Otology. *A Text Book for Medical Students.* By ALBERT H. BUCK, M. D., Clinical Professor of the Diseases of the Ear, College of Physicians and Surgeons, Medical Dept., Columbia University, New York. Second Edition. Cloth; 216 pp.; 75 illustrations in text. William Wood & Co., New York, publishers, 1903. Price, $1.50, net.

For the undergraduate in medicine, this small volume may be of some assistance in obtaining a fundamental knowledge of Otology when used as a supplement to a lecture course in this specialty. As the author tersely states in his preface, "such a manual is intended for the exclusive use of undergraduate medical students," and in this limited field, is an acceptable little manual.

We consider it a better exposition of the subject matter than that usually found in the Quiz-Compend, intended for a similar purpose.

M. A. G.

A Thesaurus of Medical Words and Phrases. By WILFRED M. BARTON, M. D., Assistant to Professor of Materia Medica and Therapeutics, and Lecturer on Pharmacy, Georgetown University, Washington, D. C.; and WALTER A. WELLS, M.D., Demonstrator of Laryngology and Rhinology, Georgetown University, Washington, D. C. Handsome octavo of 534 pages. Philadelphia, New York, London; W. B. Saunders & Company, 1903. Flexible leather, $2.50 net; with thumb index, $3.00 net.

This work is the only Medical Thesaurus ever published. It performs for medical literature the same services which Roget's work has done for literature in general; that is, instead of, as an ordinary dictionary does, supplying the meaning to given words, it reverses the process. and when the meaning or idea is in the mind, it endeavors to supply the fitting term or phrase to express that idea. To obviate constant reference to a lexicon to discover the meaning of terms, brief definitions have been given before each word. As a dictionary is of service to those who need assistance in interpreting the expressed thought of others, the Thesaurus is intended to assist those who have to write or to speak to give proper expression to their own thoughts. In order to enhance the practical application of the book cross references from one caption to another have been introduced, and terms inserted under more than one caption when the nature of the term permitted. In the matter of synonyms of technical words the authors haye performed for medical science a service never before attempted. Writers and speakers desiring to avoid unpleasant repetition of words will find this feature of the work of invaluable service. Indeed, this Thesaurus of medical terms and phrases will be found of inestimable value to all persons who are called upon to state or explain any subject in the technical language of medicine.

Die Verletzungen des Gehororgans, besonders auch ihre Beziehungen zum Nervensystem. Forensische Abhandlung. (Injuries to the ear) By DR. PAUL BERNHARDT, of Berlin. Monograph, pp 131. paper cover; August Hirschwald, Berlin, publisher, 1903. Price, 3 mk. (75 cts.)

This monograph presents the medico-legal aspects of injuries to the ear, simulation, death due to ear diseases, life insurance affected by ear lesions, the relation of injuries of the ear to the nervous system and many other paragraphs of a similar character of interest to otologists.

M. A. G.